citation and similar papers at <u>core.ac.uk</u>				
In the Interest of carry and			provided	<i>by</i> NASA Technica
semination of Earth Resour	ces Survey	· .	U 17-1	5126
Program information and W	HIIONT HADITLY			· - 44
				• •
UNIVERSITY OF	F KANSAS	CRINC		
ERTS DETAILED IMAGE IN	TERPRETATION REPORT	DIIR No.	2264-1	
		Date Prepared	3 Jan 73	
	·	Tepared _		
Subject: Monitori	ng corn harvest progress from	m ERTS-1, south	ern Finney (County,
Kansas .				•
Subject Geographic	یک در این می میرونی کور می والد میلون وی والد کر این و این می این می و این می و این می ورد این و می می والد ای مراجع	NASA Te	.c t	<u></u>
Coordinates 37-50N	100-55W	Site No.	N/A	
NASA Image Descriptors:	Corp Agriculture			
	Com, Agriconoic			
	·			
Report Summary: Compo	rison of ERTS-1 imagery of	three dates reve	als that corr	harvesti
is detectable by observing	tonal change associated wi	th the change fr	om photosyn	thetically
active plants to bare groun	nd.			
	· · ·			
PROGRESS FROM COUNTY, KANSAS Research, Inc.	ONITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS	ST NEY or for CL 02C	N7. Un 3/13 000	3-21309 clas 472
PROGRESS FROM COUNTY, KANSAS Research, Inc.	ONITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS	ST NEY r for CL 02C	N7 Un 3/13_00	3-21309 clas 472
PROGRESS FROM COUNTY, KANSAS Research, Inc.	ONITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS	ST NEY r for CL 02C	N7 53/13 00	3-21309 clas 472
PROGRESS FROM COUNTY, KANSAS Research, Inc. Imagery References CRINC NASA In	ONITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS nage Subject Image (ST NEY r for CL 02C Coordinates	N7 53/13 004 Cloud	3-21309 clas 472
Imagery References CRINC NASA In Image No. ID Bloc	MITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS mage Subject Image (k X	ST NEY r for CL 02C Coordinates Y 54	N7 S3/13 00 Cloud Cover	3-21309 clas 472 Imag Quali
PROGRESS FROM COUNTY, KANSAS Research, Inc. Imagery References CRINC NASA In Image No. ID Bloc MP00019 E-1006-165	MITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS mage Subject Image (k X 11-5 (9.5) 36	ST NEY r for CL 02C Coordinates Y 54	N7 S3/13 00 Cloud Cover 0	3-21309 clas 472 Imag Quali Good
Imagery References CRINC NASA In Image No. ID Bloc MP00019 E-1006-165 MP00279 E-1024-165	NITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS mage Subject Image (k X 11-5 (9.5) 36 11-5 (9.5) 34	ST NEY r for CL 02C Coordinates Y 54 84	N7 53/13 004 Cloud Cover 0 0	3-21309 clas 472 Imag Quali Good Good
Imagery References CRINC NASA In Image No. ID Bloc MP00019 E-1006-165 MP00279 E-1024-165 MN00113 E-1061-1657	MITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS mage Subject Image (k X 11-5 (9.5) 36 11-5 (9.5) 34 70-5 (7) 46	ST NEY r for CL 02C Coordinates Y 54 84 13	N7 53/13 00 Cloud Cover 0 0 0	3-21309 clas 472 Imag Quali Good Good Good
Imagery References CRINC NASA Ir Image No. ID Bloc MP00019 E-1006-165 MP00279 E-1024-165 MN00113 E-1061-1657	MITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS mage Subject Image (k X 11-5 (9.5) 36 11-5 (9.5) 34 70-5 (7) 46	ST NEY r for CL 02C Coordinates Y 54 84 13	N7 53/13 000 Cloud Cover 0 0 0	3-21309 clas 472 Imag Quali Good Good Good
Imagery References CRINC NASA In Image No. ID Bloc MP00019 E-1006-165 MP00279 E-1024-165 MN00113 E-1061-1657	NITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS mage Subject Image (k X 11-5 (9.5) 36 11-5 (9.5) 34 70-5 (7) 46	ST NEY r for CL 02C Coordinates Y 54 84 13 (N7 53/13 004 Cloud Cover 0 0 0	3-21309 clas 472 Imag Quali Good Good Good
PROGRESS FROM COUNTY, KANSAS Research, Inc. Imagery References CRINC NASA In Image No. ID Bloc MP00019 E-1006-165 MP00279 E-1024-165 MN00113 E-1061-1657	ONITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS mage Subject Image (X 11-5 (9.5) 36 11-5 (9.5) 34 70-5 (7) 46	ST NEY r for CL 02C Coordinates Y 54 84 13	N7 53/13 00 Cloud Cover 0 0 0	3-21309 clas 472 Jmag Quali Good Good Good
PROGRESS FROM COUNTY, KANSAS Research, Inc. Imagery References CRINC NASA In Image No. ID Bloc MP00019 E-1006-165 MP00279 E-1024-165 MN00113 E-1061-1657	ONITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS mage Subject Image (x X 11-5 (9.5) 36 11-5 (7) 46	ST NEY r for CL 02C Coordinates Y 54 84 13 (N7 53/13 004 Cloud Cover 0 0 0	3-21309 clas 472 Imag Quali Good Good Good
PROGRESS FROM COUNTY, KANSAS Research, Inc. Imagery References CRINC NASA In Image No. ID Bloc MP00019 E-1006-165 MP00279 E-1024-165 MN00113 E-1061-1657 MN00113 E-1061-1657	UNITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS mage Subject Image (k X 11-5 (9.5) 36 11-5 (9.5) 34 70-5 (7) 46 J14-7 Scale 1:250,000	ST NEY r for CL 02C Coordinates Y 54 84 13 (N7 53/13 004 Cloud Cover 0 0 0	3-21309 clas 472 Imag Quali Good Good
PROGRESS FROM COUNTY, KANSAS Research, Inc. Imagery References CRINC NASA In Image No. ID Bloc MP00019 E-1006-165 MP00279 E-1024-165 MN00113 E-1061-1657 MN00113 E-1061-1657	UNITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS mage Subject Image (k X 11-5 (9.5) 36 11-5 (9.5) 34 70-5 (7) 46 J14-7 Scale 1:250,000	ST NEY r for CL 02C Coordinates Y 54 84 13	N7 53/13 004 Cloud Cover 0 0 0	3-21309 clas 472 Imag Quali Good Good
PROGRESS FROM COUNTY, KANSAS Research, Inc. Imagery References CRINC NASA In Image No. ID Bloc MP00019 E-1006-165 MP00279 E-1024-165 MN00113 E-1061-1657 MN00113 E-1061-1657	UNITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS mage Subject Image (k X 11-5 (9.5) 36 11-5 (9.5) 34 70-5 (7) 46 J14-7 Scale 1:250,000	ST NEY r for CL 02C Coordinates Y 54 84 13 (N7 53/13 004 Cloud Cover 0 0 0	3-21309 clas 472 Imag Quali Good Good
PROGRESS FROM COUNTY, KANSAS Research, Inc. Imagery References CRINC NASA In Image No. ID Bloc MP00019 E-1006-165 MP00279 E-1024-165 MN00113 E-1061-1657 MN00113 E-1061-1657 MN00113 E-1061-1657	UNITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS mage Subject Image (k X 11-5 (9.5) 36 11-5 (9.5) 34 70-5 (7) 46 J14-7 Scale 1:250,000	ST NEY r for CL 02C Coordinates Y 54 84 13 (N7 53/13 004 Cloud Cover 0 0 0	3-21309 clas 472 Imag Quali Good Good
PROGRESS FROM COUNTY, KANSAS Research, Inc. Imagery References CRINC NASA In Image No. ID Bloc MP00019 E-1006-165 MP00279 E-1024-165 MN00113 E-1061-1655 MN00113 E-1061-1655 MN00113 E-1061-1655 MN00113 E-1061-1655	UNITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS mage Subject Image (x X 11-5 (9.5) 36 11-5 (9.5) 34 70-5 (7) 46 J14-7 Scale 1:250,000	ST NEY r for CL 02C Coordinates Y 54 84 13 (N7 S3/13 004 Cloud Cover 0 0 0 0 0 0	3-21309 clas 472 Imag Quali Good Good
PROGRESS FROM COUNTY, KANSAS Research, Inc. Imagery References CRINC NASA In Image No. ID Bloc MP00019 E-1006-165 MP00279 E-1024-165 MN00113 E-1061-165 MN00113 E-1061-165 MN00113 E-1061-165 MN00113 E-1061-165	UNITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS mage Subject Image (k X 11-5 (9.5) 36 11-5 (9.5) 34 70-5 (7) 46 J14-7 Scale 1:250,000 No <u>×</u> Williams Principal Investigat	ST NEY r for CL 02C Coordinates Y 54 84 13 (tor functional stanley A	N7 S3/13 004 Cloud Cover 0 0 0 0 0 0 0 0 0 0 0 0 0	3-21309 clas 472 Imag Quali Good Good Good
PROGRESS FROM COUNTY, KANSAS Research, Inc. Imagery References CRINC NASA In Image No. ID Bloc MP00019 E-1006-165 MP00279 E-1024-165 MN00113 E-1061-165 MN00113 E-1061-165 MN00113 E-1061-165 Map References: USGS Na Digital Data Used Yes Image Donald L. Willic	UNITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS mage Subject Image (k X 11-5 (9.5) 36 11-5 (9.5) 34 70-5 (7) 46 J14-7 Scale 1:250,000	ST NEY r for CL 02C Coordinates Y 54 84 13 (tor fr. Stanley A.	N7 S3/13 004 Cloud Cover 0 0 0 0 0 0 0 0 0 0 0 0 0	3-21309 clas 472 Imag Quali Good Good Good
PROGRESS FROM COUNTY, KANSAS Research, Inc. Imagery References CRINC NASA In Image No. ID Bloc MP00019 E-1006-165 MP00279 E-1024-165 MN00113 E-1061-165 MN00113 E-1061-165 MN00113 E-1061-165 MN00113 E-1061-165 MN00113 E-1061-165 MN00113 E-1061-165 MN00113 E-1061-165 MAD References: USGS N.	ONITORING CORN HARVE ERTS-1, SOUTHERN FIN (Kansas Univ./Cente) 2 p HC \$3.00 CS mage Subject Image (k X 11-5 (9.5) 36 11-5 (9.5) 34 70-5 (7) 46 J14-7 Scale 1:250,000 No _X JULIANS Principal Investigat 322 User	ST NEY r for CL 02C Coordinates Y 54 84 13 (torf <u>estanley A</u> .	N7 S3/13 004 Cloud Cover 0 0 0 0 0 0 0 0 0 0 0 0 0	3-21309 clas 472 Imag Quali Good Good Good

Tones of fields in the southern Finney County test area were optically compared on three MSS5 images, acquired 29 July 1972, 16 August 1972, and 22 September 1972.

Fifty-six fields in the test area were planted to corn, according to the ground truth. All of these fields were irrigated.

All fifty-six corn fields appeared dark gray or black on the film positive of 29 July 1972. These dark tones are associated with high absorption of red light by the photosynthetically active corn.

All except one of these fields also appeared dark gray or black on 16 August 1972. The one exception had a dark band oriented east-west through the center of the field. Both the northern and southern parts of the field were light gray. The light gray tone is associated with bare sandy soil in Finney County.

On 22 September 1972, eight of the corn fields, including the one observed on 14 August 1972, were completely light gray. Subsequent ground truth verified that these fields had been harvested.

Of 13 grain sorghum fields in the test area, none had been harvested by 22 September 1972. Grain sorghum, particularly when grown under irrigation, is rarely harvested before the first killing frost.

One alfalfa field was being mowed on 22 September 1972. The mown portion appeared medium gray.

On the basis of the facts presented above, it is inferred that all fields in southern Finney County which had been dark gray or black in July and were light gray in September were corn fields which had been harvested by 22 September 1972. The images were compared under this inference and the following conclusions were drawn: (1) 15 fields had been completely harvested and (2) harvesting was in progress in four other fields.

Direct cost was 1.5 hours interpreter time, plus \$1.50 nonexpendable supplies.