

Satellites, aircraft inventory Nebraska's wetland

By John Ortman

When the Nebraska Game and Parks Commission recently decided to inventory every wetland within the 77,000-square-mile area of Nebraska, it turned to remote sensing.

Traditional ground-survey methods would have taken too long and been too expensive, according to associate professor Paul Seevers. Seevers, a research scientist working for the Conservation and Survey Division of the Institute for Agriculture and Natural Resources, said remote sensing, using satellites and aircraft, would do the job in less than a year at a fraction of the cost.

Seevers said remote sensing may be divided into two categories: that done from aircraft and that done from satellites.

Landsat I and II satellites, launched from Cape Kennedy, use electronic scanners to record the earth's surface, Seevers said. Digital data then is transmitted to one of three receivers in the United States, or one each in Brazil and Canada, he said.

The division then buys the raw data from the Eros Data Center in Sioux Falls, S.D., Seevers said, where data is available to the general public.

Satellite data

Seevers said the satellite data comes in four bands: visible red, visible green, near-infra red and very near-infra red. Using computers the images then can be viewed in black and white or simulated color, he said.

Seevers stressed the satellite data lacked the fine detail needed for keeping track of small objects.

"You have to maintain your data within the limits of resolution," he said. He added satellites are fine for spotting such large objects as center-pivot irrigation systems. The division can prepare an up-to-date inventory of center pivots in about three months using data gathered during the summer months, Seevers said.

"It would be impossible to inventory one particular thing in the state of Nebraska from the ground," Seevers

said. He added there is no ground access to large parts of the Sandhills and other areas of the state. He said remote sensing avoids this problem.

Falling water tables

Seevers explained another project just getting underway which he hopes will spot falling water tables by reduction of lakes' surface areas. Two lakes each in Holt and Sheridan counties have been equipped with ground-testing instruments, Seevers said.

If the ground and satellite data show similar results, satellites may replace ground testing in the future, he said.

Seevers said because most hayland in the Sandhills is sub-irrigated by ground water, falling water tables have a direct relation on the "ability of the rancher to support himself."

"It looks reasonable right now," Seevers said, but he added ground-test results need to be studied first.

Seevers said aerial photography provides the great detail needed in land classification studies. The division began to classify land into 27 urban and agricultural categories several years ago when federal land use legislation was pending in Congress, Seevers said.

Classifying continues

The legislation was not passed, but the division continues to classify land for Nebraska's Natural Resource Districts, he said. Each square mile of land is laid out in 10-acre plots and the dominant use for each plot is identified. Seevers said color maps of each Natural Resource district can then be made showing great detail.

Seevers and two students began testing aerial photography this summer as a method of monitoring crop diseases and fertility problems. Missions were flown over experiment station fields. Data will be correlated with that gathered by people on the ground, Seevers said. Seevers said an evaluation of the technique will be made early in 1978.

Seevers said he thinks the technique will show a correlation but he is not sure it will prove economical for

the average farmer.

The division's remote sensing activities are financed in part by a matching grant from the National Aeronautics and Space Administration (NASA), Seevers said. NASA pays 70 per cent while the University of Nebraska provides the rest of the \$200,000 grant, he said. Seevers said Nebraska Air National Guard pilots and aircraft are used on the photography missions.

Seevers said he regards remote sensing as a tool to be used by experts in various fields rather than an end in itself.

Replacement sought for student affairs

The office for student affairs hopes to have an assistant vice chancellor by Oct. 1, according to Vice Chancellor for Student Affairs Richard Armstrong.

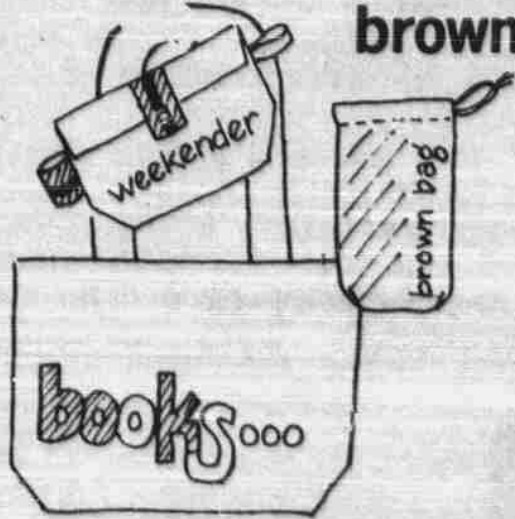
Ron Gierhan, former assistant vice chancellor for student affairs, left UNL in mid-August to accept a position as vice president for student affairs at the University of Western Illinois at Macomb.

Until a replacement is hired, that office will remain vacant, Armstrong said. A new assistant may not be appointed until Oct. 1.

"I'm not going to appoint an acting assistant vice chancellor during the interim," Armstrong said. "Advertisements for the job appeared in newspapers last weekend (Aug. 20-21). Applications must be in by Sept. 9," he said.

Armstrong's assistant will be responsible for budget preparation and coordination, personnel management, staff studies, annual reports, publications and special programs, including Title IX (which prohibits sex discrimination in schools), the handicapped act and the privacy act, he said.

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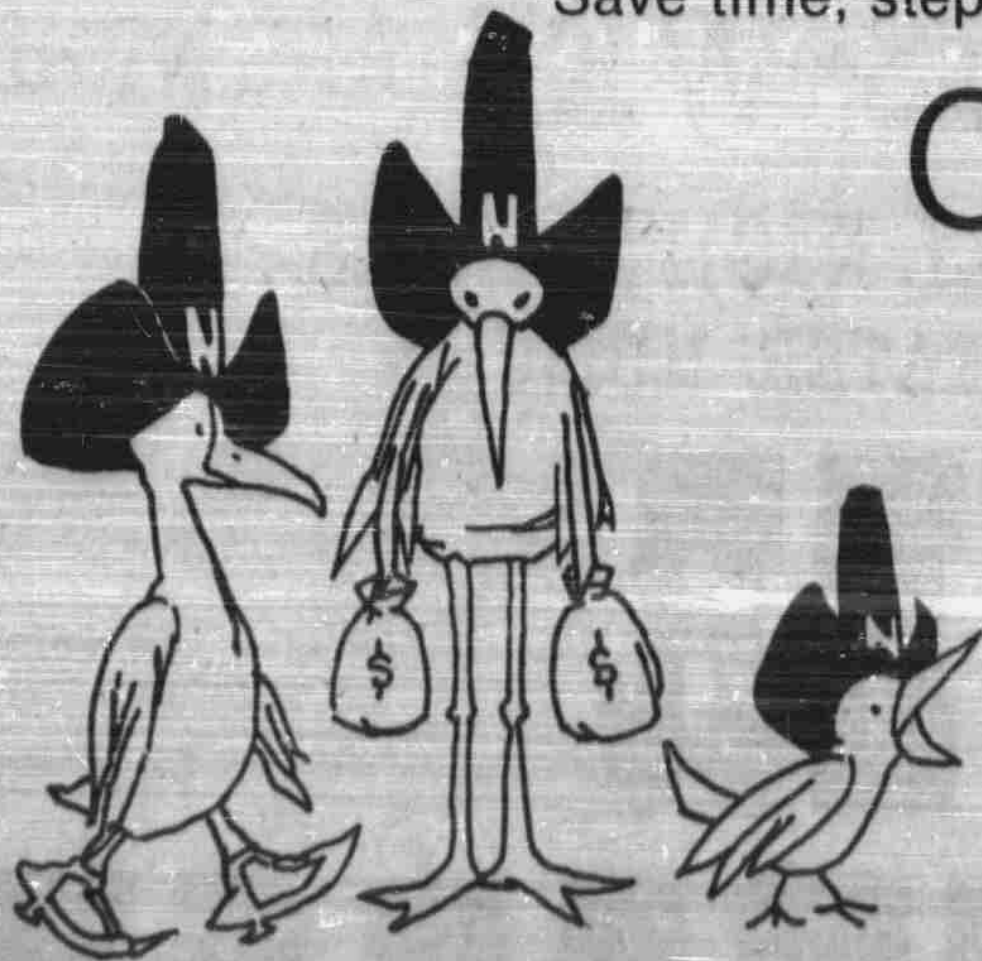
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