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METHODS TO REDUCE CROP DEPREDATION BY CRANES IN SIBERIA (TRANS-BAIKAL REGION)

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Abstract: Methods of reducing crop depredation by cranes were tested in Daursky State Nature Biosphere Reserve on the steppes of southern Siberia. The Torey Lakes and numerous small lakes support autumn gathering of cranes and waterfowl. Croplands (mainly oats and wheat) attract staging cranes, geese, and ducks. Up to 42,000 demoiselle (*Anthropoides virgo*) and 1,100 hooded cranes (*Grus monacha*) (>10% of world populations for these species) can feed in the fields near the reserve and cause significant damage (up to 70% in some wheat fields). We investigated the problem during 1992-2004 and suggested various methods to reduce damage. The first suggestion was to move grain fields farther from wetlands (especially from crane roost sites). Second, cultivate lure fields at locations most convenient for birds (near roosts). Millet and wheat (millet being better), could be planted in small lure plots (5-10 ha). A third method was to provide alternative food, such as foxtail grass (e.g., *Setaria viridis*), and grow it on fallow lands near wheat fields. A fourth suggestion was to adjust the period and technology of harvest. Experimental trials of our recommendations during 2000-2003 showed good results. At crop fields moved 10-15 km from roosts, cranes fed 15-30 times less than at fields located 1-2 km from the Torey Lakes. Lure millet fields attracted cranes, and the birds stayed out of adjacent wheat until after harvest. Before harvest, cranes ate mainly millet and *Setaria viridis* (about 90% of diet), with wheat comprising 10%. Cooperative farms cultivated lure fields without government subsidies, as the lure crop program cost about 1 tenth of the previous damage.

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Key words: *Anthropoides virgo*, crop depredation, demoiselle crane, *Grus monacha*, hooded crane, lure crop, Siberia, Torey Lakes.
