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Farming and Pheasants in South Dakota

Cooperative Extension South Dakota State University

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FS 656

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Cooperative Extension Service
South Dakota State University
U.S. Department of Agriculture

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Pheasant Task Force Committee
South Dakota State University

Long-term declines in pheasant numbers occur at the same time that farming intensity increases.

Recognizing this association, the Pheasant Congress requested that Governor Kneip urge the Dean of the College of Agriculture and Biological Sciences at SDSU to appoint a task force of knowledgeable individuals on the SDSU faculty to evaluate pheasant-farming relationships.

The task force has divided the practices into three categories: 1) Positive agricultural practices that benefit both the pheasant and the farmer, 2) Incentive practices that benefit pheasants but that either incur additional costs or restrict returns to the farmer, and 3) Negative agricultural practices that, in the best judgment of the task force, benefit neither the farmer nor the pheasant.

The task force recognizes that specific instances will occur where these general recommendations will not be applicable. It believes, however, that they are relevant for most situations in the pheasant range in South Dakota. This has been prepared in response to the Governor's request. It also has been developed primarily for use by farmers and as reference material for the general public.

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Agricultural Practices and Pheasants

Positive agricultural practices	Effects		
	Pheasants	**Agronomically**	**Economically**
Utilize minimum tillage where possible and delay plowing until spring.	Minimum tillage provides winter food and reduces down-wind drifting of snow into shelterbelts and marshes.	Crop residues are increased above ground. Soil loss from wind and water is reduced. Soil moisture is increased by reduced snow blow-off and increased soil permeability. Increased survival of some plant pathogens and insects is a negative response.	Depending on soil, minimum tillage could save on total annual expenditures by reducing fuel and labor costs. Only finely textured soils in wet bottomlands need to be fall plowed. Pathogen control and possible loss to pathogens increase costs.
Leave two or more rows of corn stalks adequately spaced across the field when corn is utilized as harvested forage.	Standing stalks reduce down-wind drifting of snow into winter habitat, and shattered ears provide winter food.	Standing stalks reduce soil losses from wind. When adequately spaced throughout the field, standing corn stalks encourage greater snow cover, thus improving moisture conditions. Entry into the field in the spring may be delayed due to added moisture.	Increased soil moisture will result in higher total net farm income in the long term. A small loss in income may occur from leaving forage the first year. However, increased yields will result from higher soil moisture accumulation.

Positive agricultural practices, continued	Effects		
	Pheasants	**Agronomically**	**Economically**
Use rest-rotation grazing.	Pastures undergoing a rest period provide nesting cover and brood rearing cover.	Rested pastures provide preferred forage species, better root storage for regrowth, and reduced invasion by undesirable plants. Soil erosion from wind and water is decreased.	Improved management will normally increase returns. Initial capital input for additional fences and water development may be required.
Avoid overgrazing throughout the year.	Remaining vegetation provides brood rearing and nesting cover during wet years and general protective cover for pheasants except during winter.	A good management guideline is to take half and leave half of the forage. Proper grazing decreases hazards of soil erosion from both wind and water action, increases snow retention, discourages weeds, and stabilizes the more productive grass and legume species.	Moderate grazing maximizes net income. Light grazing maximizes gross return per cow. Heavy grazing maximizes gross return per acre, but results in increased renovation cost.
Develop new shelterbelts or fieldbelts and renovate deteriorating belts.	At a stage of development when it is no longer necessary to cultivate to maintain trees, shelterbelts provide good nesting cover. With sufficient rows and correct species composition, shelterbelts can protect pheasants through the winter, assuming that food is available within ¼ to ½ mile.	Tree belts add soil moisture to the field, especially when trees are young. Belts reduce evapotranspiration downwind, provide snow retention, and reduce wind erosion. A reduction of soil moisture occurs near belts as belts mature. Thus, crops planted near the belts will yield less.	Tree belts occupy productive land, and a reduction in net income will occur temporarily until added soil moisture in adjacent areas provides increased crop yields. Cost is involved in establishing new belts and renovation of old belts. Fences must be provided for their protection.
Increase junipers in shelterbelts and fieldbelts.	Junipers increase the value of tree belts to pheasants in winter, particularly during severe blizzards.	Junipers reduce wind speed, increase snow accumulation, and lower the wind-chill factor for farmstead and livestock. Junipers provide greater wind protection for crops than other tree species, and add increased permanence to the belt.	Junipers require more care for successful establishment (3-5 years). Reduced wind-chill in winter may result in reduced maintenance costs for livestock, or more efficient gains from the same amount of food.
Use a greater variety of adapted crops in farm rotations.	A variety of crops in each section or farm is more likely to provide for the basic needs of pheasants than a single monoculture. For instance, some crops can be used as brood cover, others for food, and others for nesting. In addition, areas with a greater variety of crops tend to provide shelter and living room for wildlife.	Contour or strip cropping provides variety and reduces erosion. Crop rotation reduces seriousness of disease, insect damage, and weed problems. Rotation may improve efficiency of fertilization.	Greater stability of farm income results from diversified farming. Lower efficiency in field operations may occur because additional machinery and more labor may be needed.
Fence dugouts.	Fencing of dugouts can provide a small area of good nesting cover and protection for rearing of broods. Areas can also be used for cover by pheasants in the fall prior to severe weather.	Fencing extends the life of the dugout, reduces maintenance cost, and prevents loafing of cattle in the dugout.	Fencing prevents some accidental livestock losses. However, fencing and water lift equipment require additional investments.
Chisel plow.	More food is available on the soil surface for pheasants.	Chisel plowing maintains a protective covering over the soil surface and reduces erosion.	The practice of chisel plowing is less expensive than moldboard plowing.

Incentive practices	Effects		
	Pheasants	**Agronomically**	**Economically**
Delay cutting of alfalfa for one week or longer.	Nesting pheasants would be greatly assisted in bringing their clutches to full term with even a one-week delay in cutting. Normal alfalfa cutting precedes peak pheasant hatching by about 2 weeks.	Cutting at 10% bud stage usually provides optimum forage quality; a delay of one week decreases quality and increases fiber at the expense of protein. Protein composition is reduced 2% by delaying cutting one week from first flower.	Quality of alfalfa, if the cutting is delayed one week, would be adequate for beef cows. More grain and supplement would be needed for dairy cows and would increase monthly feed cost. A 1200-pound cow producing 40 lbs of milk would require at least $3 worth of additional feed per month.
Develop set-aside areas as "bait cover" and general pheasant habitat.	Vegetative growth in set-aside areas encourages pheasants to nest in areas other than alfalfa. Survival of hen pheasants and broods is improved by encouraging them to use the non-alfalfa types of available cover.	Set-aside areas should be considered where cultivation would cause serious soil losses. Primary and secondary noxious weed problems may develop, however.	No cost will accrue if the area is truly a non-use area. If the area is a source of weed infestation, then weed control will be necessary. A set-aside area may require incentive payment of taxes plus 4-6% of the land value.
Re-establish old, drained wetlands that have not proven agriculturally productive.	Re-establishment of wetlands would provide a strong positive impact by improving pheasant winter cover, food availability, roosting and brood rearing habitat.	Re-establishment of wetlands would relieve the obligation to control weeds, reduce the uncertainty of producing a crop, and save the energy and effort associated with crop failure.	Economic loss would equal cash rent for any productive acres lost by re-establishing the wetland, in addition to the cost of re-establishing.
Maintain wetlands.	Wetlands with emergent plants often provide excellent winter cover. Uplands and dry wetlands are utilized for nesting, brooding, and roosting cover by pheasants.	Usually such sites are poorly drained and not conducive to agronomic production. Some wetlands are important in recharging ground water sources. However, some uplands may be removed from production.	Incentive payments or purchase agreements are currently available.
Leave fences and associated strips of grass cover between crop areas.	Undisturbed grass strips provide excellent sites for nesting and brooding and excellent fall cover for hunting. As the fence row increases in width, the nesting success per hen pheasant and the number of hen pheasants using the fence row for nesting will increase. Use of the strips as turning areas for machinery diminishes the value for pheasants.	There will be a loss of production in crops that might be grown in areas covered by fences and grass strips.	The potential for reimbursement for loss of acres, inconvenience of leaving strips undisturbed, and reduction in net income is present. An 8-foot strip represents the loss of one acre in ½ mile.

Negative agricultural practices	Effects		
	Pheasants	**Agronomically**	**Economically**
Fall plowing in most soil types.	Fall plowing buries food and reduces cover. It also destroys winter cover by increasing drifting of snow and soil into shelterbelts and marshes.	Most moderately to well-drained upland soils can be either fall chisel plowed or sub-surface tilled. When no weed problems or adverse soil conditions exist, fall tillage usually is not needed. Fall plowing is only necessary on poorly drained bottomland soils in most cases.	Cost of fall plowing with a moldboard plow is greater than comparable methods. If spring tillage is just as effective, it is better to wait until spring.
Overgrazing of pastures.	The pasture cannot be used for nesting and rearing of broods. It will receive reduced use by adult pheasants during all periods of the year.	Overgrazing accelerates soil erosion, decreases productivity, and has deleterious effects on desirable species of grasses and legumes.	Overgrazing lowers the long-range net income potential.
Heavy grazing of shelterbelts.	Heavy grazing destroys the value of shelterbelts for nesting, brood rearing, and general cover.	Heavy grazing decreases the effectiveness of the shelterbelt for wind erosion control, initiates a rapid decline in the viability of the trees, and greatly reduces the lifespan of the belt.	Loss to the farmer occurs because of reduced amounts of soil moisture and increased wind erosion. Shelterbelts may be destroyed, and replanting is expensive.
Removal of old tree blocks and belts. Planting of single-row belts instead of multi-row belts.	These practices remove areas used by nesting and brooding pheasants. Single-row tree belts provide limited winter habitat for pheasants. Planting of narrow strips of perennial tall grass for erosion control, as is occurring in some locations, does not equal the value of multi-row belts for pheasants.	Loss of multi-row belts reduces the effectiveness of shelterbelts for wind erosion control and may be accompanied by a loss of soil moisture. However, additional land is brought into production. Perennial tall grass species are recommended in lieu of single-row tree belts when multi-row belts are not possible.	Acceleration of soil losses from wind erosion will likely result in a long-term loss of net income.
Trampling of dugouts by cattle.	Trampling eliminates the use of dugouts for nesting, brooding, or roosting cover.	Access to dugouts by cattle could lead to increased silting and potential loss of the dugout. Livestock may be lost in dugouts.	Cost of replacing the dugout and/or lost livestock could be alleviated by restricting livestock access to dugouts.
Overuse of herbicides.	Excess herbicide application will reduce some of the species of plants important as food for pheasants. Density of herbaceous nesting cover will be reduced. Protective woody cover may be lost if trees in adjacent shelterbelts are killed.	Primary and secondary noxious weeds must be controlled. Other weeds may be left as wildlife cover in non-use areas, and no herbicide applications are needed if spreading does not occur.	Overuse of herbicides is detrimental to animals and crops. Serious pollution of surface and ground water may occur. Extra herbicide usage increases cost but results in no added income.

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