

The National Grasslands: Past, Present and Future Land Management Issues

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Part I: Historical Development of the National Grasslands

Looking Back

Public land use decisions are of growing importance, as society has become increasingly concerned about these lands. To understand the importance of the current issues, it is beneficial to first look back. While the history of our National Parks and Forests are more commonly known, the National Grasslands are often overlooked. Understanding the historical development of the National Grasslands could help us develop better current land management policies.

Movement West

Movement of Americans from the Eastern to the Western United States gained intensity following the California Gold Rush of 1848. Settlement of the vast interior, the Great Plains, was encouraged by the Homestead Act of 1862 and later legislation. This resulted in the transfer of public land to private ownership. Much of this land was marginal and should not have been plowed. Even the largest homesteads were based upon land use practices in the humid Eastern United States, and did not adequately consider the aridity of the West.

The physical environment west of the 100th Meridian is drastically different from the Eastern United States. Soils, climate, and vegetation vary from conditions in the East. Most Great Plains soils can be productive with appropriate agricultural techniques, good rainfall, and adequate soil-water storage. With less favorable conditions, these soil types are highly erodible and unproductive for farming. Along the Western boundary of the Plains, the soils are Aridisols, among

the most management sensitive and one of the least productive soils in the world. Climate in the Great Plains is characterized by low annual and highly variable precipitation, and large seasonal temperature variations. Overall, this is a region of extremes in terms of temperature variations, precipitation, and soils.

Because of these physical characteristics, drought has been a recurrent phenomenon on the plains. Documentation of climatic data began only in the late nineteenth century, but records show periodic droughts with the Dust Bowl a severe example (Figure 1). As soil scientist Hugh Bennett noted, the dust storms "blotted out the sun over the nation's capital, drove grit between the teeth of New Yorkers, and scattered dust on the decks of ships 200 miles out to sea" (Bennett 1940). This captured the attention of the eastern public and led to government intervention.

Federal Involvement

With large numbers of farm failures on homesteaded land, the government reacquired some land in the plains region. Poor farmland was taken out of production by government programs which were established to purchase land and relocate the farm families. Specifically, the National Resources Board began to purchase land which was in such poor condition that "nothing is in store for the inhabitants but extreme poverty and wretchedness" (National Resources Board 1934).

The National Industrial Recovery Act of 1933 and the Emergency Relief Act of 1935 increased the government purchases of these "submarginal" farmlands. These purchases became known as the Land Utilization (L-U) Projects. Between 1934 and 1938 many different agencies were responsible for administration of the L-U Lands: the Resettle-



Fig. 1. The effects of the Dustbowl Droughts on the Great Plains. Eastern Colorado, 1935. Source: Colorado Historical Society.

ment Administration, the Farm Security Administration, the Agricultural Adjustment Administration, the Land Policy Section of the United States Department of Agriculture, and the Bureau of Agricultural Economics.

The Bankhead-Jones Farm Tenant Act (1937) was the first legislation to officially recognize and describe the acquisition of L-U projects. Title III of the Act states: "The Secretary [of Agriculture] is authorized and directed to develop a program of land conservation and land utilization, in order thereby to correct maladjustments in land use, and thus assist in controlling soil erosion, reforestation, preserving natural resources,...."

In effect the Act consolidated the purchased lands, so that by 1938 there were eleven million acres of L-U Project Lands under the administration of the Soil Conservation Service (SCS)* in the Department of Agriculture. Although the most logical land management agency would have been the Federal Grazing Service (which became the Bureau of Land Management), the L-U Project Lands were not transferred. The Grazing Service was in the Department of Interior, while the L-U Lands had always been administered by the Department of Agriculture (USDA). Departmental rivalry made it unlikely that the USDA would relinquish management power over the L-U Lands (Wallach 1991).

Under SCS management, many areas were reseeded with crested wheatgrass from Russia, which livestock can graze in the spring and fall. The SCS management tore down fences and built stock watering ponds to even out the distribution of grazing animals and protect the riparian areas. Most importantly, the SCS extended grazing privileges to private land owners.

Grazing Associations

Private users were actively included in the management of grazing practices on the L-U lands. Local Grazing Associations were established. There was a "grazing value" which ranchers paid to the Association, and the Association then paid the SCS for assis-

Editor's Note: The name of the Soil Conservation Service was recently changed to the National Resource Conservation Service (NRCS)



Fig. 2. Location of U.S.F.S. National Grasslands.

tance in developing management plans. This was not called a "fee" as on other public lands. This is significant only in the sense that more emphasis was placed on local management and less on the Federal agency's role as landlord.

The Grazing Association admitted members with three qualifications: first, they must prove prior use to the lands; second, they must prove "dependency" of the public land in addition to their own private lands; third, they must have enough private lands as "commensurability" to supplement the public land grazing. In many areas established as L-U Lands, conflict grew between the ranchers and the government. The SCS was not traditionally a land management agency, and rather than remain involved in the conflict, they stepped down. Management of the eleven million acres of L-U Land was transferred within the Department of Agriculture to the Forest Service in 1953 (Dana 1956).

Forest Service Management

The Forest Service conducted a land use study of the lands in the 1950s, which concluded in massive land transfers. The BLM and the U.S. Fish and Wildlife Service received land that was

intermingled with other land already under their management in California, Texas, Utah and Montana. These areas became grazing districts or wildlife refuges. Some land was given to state or local agencies and thirteen tree covered areas were assigned National Forest status. Overall, the Forest Service kept only approximately 4 million acres, which were designated as National Grasslands in 1960 (Custer National Forest 1989) (Figure 2). The National Grasslands are distributed among Great Plains and Western States, with North and South Dakota having the most acreage (Figure 3).

The Forest Service tightened rules and central control, which led to more conflict between the government and ranchers. Basic management policies remained the same, however, and the Grazing Associations continue to play an important role in the organizational structure of grazing management. They continue to pay the "grazing value" for rangeland, which is figured differently than the grazing fees in the Forests.

On the Grasslands, the charge was initially based on a scale, established by the Public Rangelands Improvement Act of 1978 and then revised in accordance

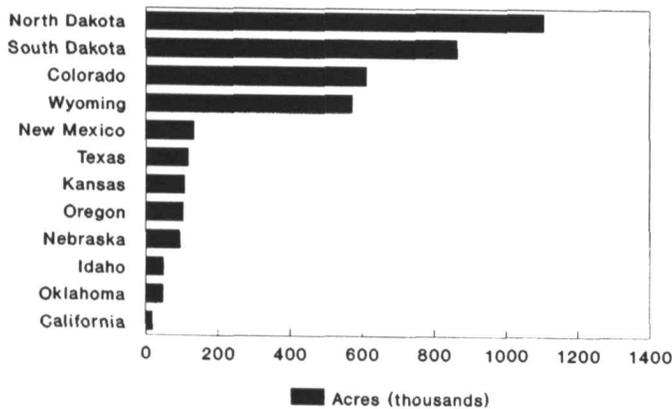


Fig. 3. National Grasslands by state.

with the Executive Order 12548 in 1986. Methods for figuring the fee are based on Animal Unit Months: a base price, multiplied by the Forage Value Index, and added to the Combined Index (Cattle Price Index minus the Price Paid Index) (Coggins and Wilkinson 1987). Indexes may vary between the Grasslands and the Forests, and thus the charge on the Grasslands is sometimes higher than the fees for grazing in the National Forests. Currently 50% of this "value," must go to the Federal Treasury, but in the past as much as 90% of the receipts were spent by the local Grazing Associations which then forwarded 10% to the federal government (Fairfax and Yale 1987). Each Grassland Association subtracts administrative overhead and money for conservation practices from the "value" before forwarding it to the Treasury. The money that is actually sent to the Federal government is called the "fee", and 25% of this amount is directed back to the respective county, for road maintenance and school funding.

The United States National Grasslands certainly have a complex and somewhat "misfit" history (Wallach 1985). Within the Forest Service, the Grasslands are each administered as a Ranger District of the nearest National Forest. Although the grassland ecosystem varies substantially from that of the forest, not all National Grasslands have a separate management mandate. In general, there is little information available on the Grasslands. Even contacting regional Forest Service offices can yield disappointing results, as USFS employees do not necessarily realize that there are Grasslands under their jurisdiction! Several regional offices do not have maps of the National Grasslands under their administration. As befits their history, the National Grasslands truly remain somewhat "misfit" among federally owned lands.

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Part II: A Case Study of Pawnee National Grassland

Introduction to the Pawnee

There are 20 National Grasslands in the U.S., located primarily in the Great Plains region. The National Grasslands are within the Forest Service, so each Grassland is administered by the nearest National Forest (Argow 1962). The Pawnee National Grassland is located in northeastern Colorado, about 75 miles from Denver and 25 miles east of Fort Collins (Rhoads 1986) (Figure 4).

Within a 30 mile by 60 mile rectangular area of Weld County in northeastern Colorado, Federal, State, and private lands are intermixed. Historical township-range land surveying and settlement patterns established the one mile by one mile square sections which form an obvious grid even today. The Pawnee National Grassland is a checkerboard of federal land that includes 193,060 acres spread out over two vast non-contiguous areas (USDA Forest Service 1990). When driving through the area on State Highway 14, it is difficult to discern Federal lands from those privately owned and managed.

The Pawnee National Grassland is administered by the U.S. Forest Service District Ranger in Greeley, Colorado. The District Office, which is approximately 20 miles south of the nearest section of National Grassland, are part of the Arapaho-Roosevelt National Forests, which are headquartered in Fort Collins, Colorado.

The Greeley Ranger District Office is just north of a huge Monfort meat packing plant; and just West of a Monfort Beef Research Center. Nearby roads are busy with huge trucks transporting cattle, and the railroad tracks beside the District Office are often blocked by long trains of cattle cars. A new visitor quickly feels the presence and importance of the cattle industry in this region.

Grasslands Management

The 1982 Forest Plan for the Arapaho-Roosevelt National Forest, which officially encompasses the Pawnee National Grasslands, had no separate management section for the grasslands. The Forest Service is currently writing an updated 1994 Forest Plan, but still has no plans for a separate section devoted to the Grasslands. There will be notes on the unique management prescriptions for the Grasslands, but this still seems to leave the Grassland with less official Federal management direction than the Forest.

In the broadest sense, Congress sets up laws for management; the Department of Agriculture establishes the regulations for its agencies; and the Forest Service decides on policies to carry out the management goals. But with no separate manage-



Fig. 4. Approaching Pawnee Butte on Pawnee National Grassland, Colorado.

ment policy, the Grasslands seem to be given a lower status by the Federal agency. The Pawnee National Grassland does not necessarily feel neglected, however, as the Staff Range Conservation explained: "It's good to be left alone. That way we can do our own thing [within the general laws, regulations, and policies]"

Pawnee Land Use

There are about 8,600 head of cattle on the Pawnee annually, concentrated in a five month summer period. A certain carrying capacity is ascertained for each designated pasture. If the weather is dry during the spring and summer, the five month period for grazing is reduced, as is often the case on the Pawnee. With the Rocky Mountains to the West and the Cheyenne Ridge to the North, the patterns of precipitation vary drastically. Most short-grass prairie ecosystems receive 12-15 inches of rain annually. Precipitation on the Pawnee is spotty, however, and varies from three to twelve inches annually over different areas of the Grassland.

Estimated vegetative biomass is an important consideration in management decisions and, the Grasslands are extremely sensitive areas prone to abuse and overgrazing. So, the vegetation present at one given time may be drastically less at another time. Careful management strategies must be fol-

lowed to promote long-term sustainability of the range (Gardner 1991). Yet there has been no comprehensive, published report assessing the range quality of the National Grasslands, or the Pawnee, specifically.

The Pawnee National Grassland property is intermixed with private lands in the area and conditions vary from pasture to pasture depending on past and current use, precipitation, soils and vegetative cover. Although within in the region of the National Grasslands, there are no stipulations for land use on the private lands, because private ownership rights supersede Federal management initiatives. Overall, most public pastures on the Pawnee appear to be in better condition than private areas. Even with a few Pawnee pastures in poor condition, the Pawnee Range Conservation believes the Grasslands overall are in good condition (Peterson 1994).

Grazing is an important element in the multiple-use characteristics of the Forest Service for the Grasslands. Grazing charges for the Grasslands are set by Congress, and in 1992, the cost was \$3.42/AUM (Animal Unit Months), but dropped to \$2.04 in 1993. Of the money taken in from grazing, the local Grazing Association, which is responsible for maintenance, receives a variable portion for maintenance. Twenty-five percent of

all money earned on the Grassland, from grazing and mineral development, goes to local county governments for schools and roads. When the grazing charge fluctuates, as has recently been the case, this is detrimental to rural schools which anticipate and depend on this source of funding.

Mineral leases have been profitable for the Pawnee Grasslands in the past. In 1989, for example, over \$1 million was placed in the treasury from such fees. This amount is lower now, as the price of oil is down, and fewer new leases have been purchased. The leasing process is somewhat complicated because the Bureau of Land Management actually administers the mineral leases on National Grasslands. The Forest Service considers itself a land surface agency only, thus the BLM handles the subsurface leases, but the Forest Service can opt to "disapprove" a lease and halt it (Peterson 1992).

Further complications of mineral leases have been in effect since December 1990, when new leases were halted on the Pawnee because the Grassland provides nesting habitat for the Mountain Plover. This shore bird flies from Mexico and Southern California to nest in the prairie grasslands, and is now listed as a Category One Species, which means that it is a candidate for federal listing as a threatened or endangered species by the U.S. Fish and Wildlife Service. Studies are currently being conducted to better understand the habitat requirements and mating habits of the Mountain Plover. Specifically, the research will answer questions about the importance of the Pawnee National Grassland for the bird's habitat. If the Grasslands are significantly important for this indicator species, and if the species is found to be endangered, then all activities which interfere with nesting habits will be mitigated or halted.

The Forest Service is working closely with the U.S. Fish and Wildlife Service on management decisions which could affect the bird. Although no new mineral leases have been allowed, currently-held leases are still valid. If a lease-holder wishes to develop their mineral rights, then an environmental analysis must be completed because of the sensitivity of

the Mountain Plover. It can take many years to complete an Environmental Impact Statement, so future activities on the Grasslands are somewhat in limbo. While current activities continue undisturbed, a future EIS could change this situation.

Even with the various agency interactions and recent complications, there is relatively little conflict between ranchers, managers, and visitors at the Pawnee, according to the Range Conservationist. "The Pawnee is located near the Front Range which has large cities and three large universities; it is not an isolated ranching community. So, the ranchers are exposed to many ideas and people, which helps them see the environmentalist viewpoint. Also, the short grass prairie ecosystem shows its sensitivity very clearly. When the grass is grazed to a certain point, the animals begin to lose weight, and the ranchers gladly move them off the land," (Peterson 1994). This contrasts with tall grasses that are not as obviously stressed by grazing.

Ranchers do not necessarily agree with the Range Conservationists optimistic assessment of relations among Pawnee Grassland interest groups. "I don't know where he gets his figures on cattle weights and forage," one rancher explained, requesting anonymity. Average cattle weight and biomass density are used to determine the level of sustainable grazing allowed on the Grassland each season. The rancher continued, "we are told that we have to either decrease the number of cattle we run or decrease the length of grazing time on the Grasslands. That hurts us at home. We have to keep the animals home longer and tear up our own place." Other ranchers expressed concern about the increasing use of the Pawnee for recreation, as this brings outsiders to the area. "We can't drive our cattle down the road any more [to change pastures]. People won't stop or even slow down if there is a cow in front of them. They don't understand about ranching."

On the other hand, ranchers who do not graze on public lands express another opinion. "It's a different ball game for us. We don't have that extra public land to use. We have to take care of our own land because that is all we have." Environmentalists emphasize that federal management of the National Grasslands should be more conducive to recreation such as bird watching, hiking and camping. They believe that grazing fees should be increased, or perhaps grazing should be more limited on these public lands.

This begins to describe the variety of land use goals among different interest groups on the Grasslands. The question remains if the complex management situation will shift policy to include more voices, or will remain closely aligned with ranching interests of the grazing associations, as has been the case historically.

Future Changes?

The 1992 Forest Service Report states Ecosystem Management is the trend for the future (USDA Forest Service 1992a,b,c). This would replace the traditional commodity-based management scheme of multiple-use and sustainable-yield goals. "Management techniques on the Grassland will change as Ecosystem Management takes hold," the Pawnee Range Conservationist said. The Forest Service does not presently conduct any research on the Pawnee Grasslands,

but this may change. Ecosystem Management may also mean lower numbers of cattle grazing the Grasslands. It is unclear, however, if Ecosystem Management would provide the National Grasslands with specific management goals and a more distinct recognition among Federal Lands. The Ranger Conservationist stated, "It is beneficial for the Pawnee to try Ecosystem Management, although the emphasis might shift away from grazing to more wildlife and recreation uses."

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Part III: Thoughts on Future Land Management

The National Grasslands are the most overlooked of all federally owned lands in the United States. Although they are administered by the United States Forest Service, it is possible to read literature on this particular agency, and find nothing regarding the Grasslands. In fact, whole books devoted to Forest Service planning exist which do not even mention the National Grasslands (for example Wilkinson and Anderson 1987). What is lacking in literature, is also often absent in federal land management goals, as the Grasslands are somewhat ignored by the Forest Service. Rather than possessing a clear mandate, the National Grasslands are simply administered under the nearest National Forest. The multiple-use and sustainable-yield goals of the Forests are the only guidelines given for the management of the Grasslands. Although the ecosystems vary greatly between the Forests and the Grasslands, no separate land management plans are provided for the Grasslands.

There are four main points on which to elaborate. First, management of the National Grasslands is under the Forest Service, which deals primarily with forest resources rather than grassland resources. Second, the Endangered Species Act influences land use and management possibilities on the Grasslands. Third, the Wilderness Act could be useful for grassland protection and biodiversity. Fourth, perhaps legislative change should encourage SCS involvement with the National Grasslands, since this agency assists private land owners and the National Grasslands are intermixed with pri-

vate lands.

The National Grasslands are under the management of the Forest Service, although grassland and forest ecosystems vary significantly. Each National Forest operates under a Forest Plan, but the respective Grasslands often do not appear in these guidelines. In addition, it seems that the National Grasslands are given a lower status than the forests, as evidenced in maps, books, and personal communication. Some Forest Service employees are not familiar with the term "National Grassland" although these lands are administered through this very agency. It seems that the grasslands are somewhat ignored by their governing agency.

Public awareness and use of the Grasslands are also less than that of Forests. Certainly the traditional multiple-use and sustainable-yield policies of the forests are manifested in the Grasslands with grazing and oil/gas/mineral leasing, and there is currently less recreational use on the National Grasslands than in the National Forests, although this may be changing.

Recent discussion within the Forest Service has emphasized a shift toward Ecosystem Management (USDA Forest Service 1992a,b,c). This may mean a reduction in grazing with an increased emphasis on grassland ecosystem research, and recreation uses, such as of bird watching, camping, and hiking. Such a land use change, however, would significantly impact ranchers in the region, who are mostly accustomed to isolation from outside visitors and tourists. This raises an important question about the responsibility of federal land management agencies to protect human social communities as well as plant and animal communities.

The Endangered Species Act is important for the National Grasslands and all federal lands. Management can change drastically if a threatened or endangered species has a primary habitat on the Grasslands. If the species is found to be endangered, all development could be halted and grazing may be restricted. Another key point may be the interaction of Ecosystem Management and the Endangered Species Act. If Ecosystem Management leads to more research on the Grasslands, there could be in-depth studies of various species. This would require long-term financial commitment, from the Federal government or private sources, for conducting comprehensive inventory of species. Such study also provides an opportunity for cooperative research among Federal agencies, universities, and others. If more is understood about certain species, more accurate methods of identifying and classifying them as threatened or endangered could be developed.

The Wilderness Act may prove important for the Grasslands. While most current Wilderness Areas are in mountain and alpine environments, the Act was intended to protect a variety of ecosystems. Perhaps portions of the Grasslands could be identified for Wilderness designation, since this ecosystem is clearly under-represented.

The SCS has been a prominent agency in regard to grassland and plains ecological protection on private lands, yet even the SCS has been criticized. The General Accounting Office published a report in 1977 which stated that soil conservation needs priority attention, but that the SCS has "not made satisfactory progress", and needs to put more money into land retirement, and less money into well-drilling and terracing (Rowley 1985, 189). Although the SCS has no regulatory management powers, this agency could work with the National

Grasslands to establish vegetation recovery zones and native prairie areas.

Key management issues are easy to identify, solutions are more complex. In fact, there are numerous possible management techniques for the National Grasslands.

Possibilities for Future Management

A wide spectrum of management techniques could be employed on the National Grasslands. These range from returning the Grasslands to private ownership to no change in management to the creation of wilderness areas on the grasslands. The following ideas, some of which are radical, at least provide food for thought. A line of argument is noted for each option below:

1. Return to private land:

It could be argued that the National Grasslands provide no real use for the public, and thus there is no reason to maintain them as public lands. Perhaps these lands should be transferred to private ownership. Historical perceptions of the plains as a drought-ridden, pest infested region support the argument that the plains are unable to support land uses other than grazing (Sears 1959; Kollmorgen 1969). In addition, because the Grasslands are interspersed with private lands the private owners should also manage the Grasslands. Some ranchers indicate they want to buy more land but none is available, so they are forced to have grazing allotments on federal lands. Turning the National Grasslands over to private ownership would assist ranchers in continuing their current livelihood.

2. Turn over to BLM:

The Taylor Grazing Act of 1934 was the basis for the establishment of the BLM, which occurred in 1946. Since that time, the BLM has been the main agency for range management and grazing on federal lands. It is equipped and experienced to deal with the National Grasslands, since grazing is, and should be, the main land use of these lands. Given this time of federal budget cuts, the consolidation of all public grazing lands within one Federal agency would be most efficient.

3. Leave unchanged within the Forest Service:

The National Grasslands do not need a separate land use management mandate. These federal lands were designated to the Forest Service in the 1950s, and this management should continue as is. Although there are differences between the forest and the grassland ecosystems, it is beneficial for the Forest Service to retain these lands. It is difficult to change this long-standing administrative policy, and there is no reason for change. There should be little guidance from the Federal level on local Grasslands, as local Forest Service District personnel are best qualified to manage each National Grassland individually.

4. Give separate mandate within the Forest Service:

The Grasslands should remain under Forest Service administration, but be given more direction. A separate section in each appropriate Forest Plan would address the management goals of the specific Grasslands. Consolidation of management goals among all National Grasslands could be initiated. Ecosystem Management would apply to the Grasslands, and could involve changes in the management goals.

5. Research mandate for sustainable agriculture:

Land-Utilization Projects were initially established to help people in rural areas, thus the National Grasslands should be used solely for conducting research on plains ecosystems. This should include agricultural or human impact topics such as: perennial/native grasses, long-term sustainable cropping techniques, Holistic Resource Management (HRM) ranching, rural sustainability/viability, and economic issues of subsidies and price supports (Wald and Albersweth 1989). Such a mandate could occur within continued administration by the Forest Service, but would require drastically different goals for management.

6. Creation of Wilderness Areas:

The Wilderness Act of 1964, established the Wilderness Preservation System. Part of the goal in wilderness preservation is protecting biodiversity and genetic diversity. It would be beneficial to develop wilderness areas on the National Grasslands, as this is a unique ecosystem. Current rules for Wilderness designation require contiguous land areas untouched by human development. Such stringent rules may need alteration in the case of the Grasslands, since most plains areas, including the Grasslands, have been marked by a grid-work of section roads every square mile. Larger contiguous land areas would require the purchase of some private land. Specific decisions as to the form of Wilderness would be needed. It may be possible to restore the prairie with native vegetation and reintroduce native species (such as bison) to the areas. Burning and other processes of the natural prairie ecosystem would be necessary. This could produce a human-created, Wilderness Area to protect the valuable grassland ecosystem.

Concluding Remarks

Land management issues on the National Grasslands are complex and may not be easily solved with one "right" answer. The U.S. Forest Service is currently reviewing its management goals and techniques, so new approaches may soon be apparent. Land management goals and policies are evolving in new directions with Ecosystem Management, and this may impact the National Grasslands as well as National Forests.

Land managers, ranchers and concerned citizens with an interest in "our" public lands should take the initiative to raise questions about current methods and to suggest possible changes. An important first step is to explore what broad ranging management choices exist, rather than be constricted by past experience and perceptions. At the very least these new ideas open the door for potential new management possibilities. Overall, the time has come to set new land management goals, and stop ignoring the National Grasslands.

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