TECHNICAL BULLETIN NO. 01-13 IDAHO BUREAU OF LAND MANAGEMENT AUGUST 2001

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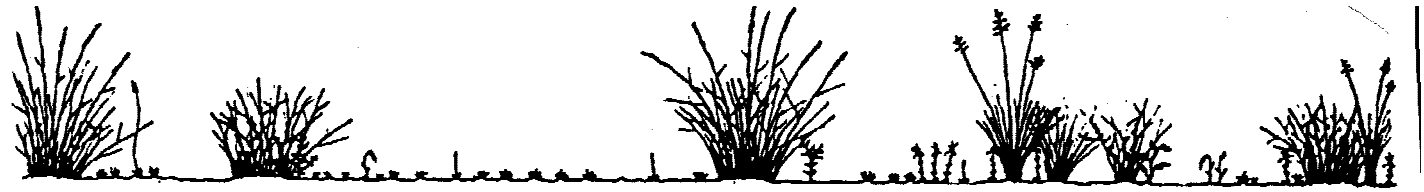
by
Bertie J. Weddell



Changing Perspectives in Nineteenth Century Written Descriptions of Palouse and Canyon Grasslands

Bertie J. Weddell
dRaba Consulting
1415 NW State Street
Pullman, WA 99163

March 2000

for the
Bureau of Land Management
Cottonwood District
Route 3, Box 181
Cottonwood, ID 83522
Order No. 1422DQP990051

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Prior to settlement of the Columbia Plateau by Euroamericans, Native Americans of the region utilized plant and animal foods as they became available throughout the year, moving around to follow patterns of seasonal abundance and manipulating the environment with fire and other means to favor important resources (Marshall 1977; 1999). After Euroamericans settled the region, the landscape was transformed by livestock grazing (1830-1890), homesteading (1875-1910), intensified agriculture (1910-1935), and mechanization (1935-1950) (Dziedzic 1951). By the 1950s, most areas of native steppe and meadow steppe vegetation (Daubenmire 1970; Franklin and Dyrness 1988) on deep soils had been converted to cropland (Buss and Dziedzic 1955), and sites with shallow soils had been impacted by grazing.

This report summarizes written accounts of the vegetation of the Palouse and Canyon Grasslands of eastern Washington, northeast Oregon, and adjacent Idaho (Weddell and Lichthardt 1998) between 1800 and 1917. It focuses on how the new arrivals perceived that landscape. Specific information about the botanical expeditions during this period can be found in McKelvey (1955), Cronquist et al. (1972), Mack (1988), and Cox (1999), and the references cited therein.

Swetnam et al. (1999), point out that although "historical perspectives increase our understanding of the dynamic nature of landscapes and provide a frame of reference for assessing modern patterns and processes," they are always colored by a " 'cultural' filtering that affects their availability, completeness, and reliability" (Swetnam et al. 1999:1189,1192). The

accounts by written nineteenth century explorers and botanists in the Palouse region were influenced by their values and biases, particularly their interest in creating, in the words of the botanist Charles Geyer, "a great western empire; an outpost of civilization, which, in time, will be the doom for the reckless despotism in the Old World" (Geyer 1846*a*:201). Toward that end, they evaluated the region's potential for development, particularly its soil, water, forage plants, minerals, and trees. They thought of these economically valuable resources as inexhaustible and worried little or not at all about the impacts of settlement.

In the canyons of the Snake River and its tributaries, explorers found short grasses that were dried up by early summer. These they considered insignificant. When the members of the Lewis and Clark party camped at the confluence of the Snake and Clearwater Rivers, near the present sites of Lewiston and Clarkston, in October of 1805, they described the landscape primarily in terms of what it lacked—trees. On both sides of the Snake River they found "an open plain leavel & fertile after ascending a Steep assent of about 200 feet, not a tree of any kind to be Seen on the river" (Thwaites 1904-1905, Vol. 3:109); "no timber of any kind, a few Hackberry bushes [*Celtis occidentalis*] and willows [primarily *Salix amygdaloides* and *Salix exigua*] excepted" (Thwaites 1904-1905, Vol. 3:110-111; bracketed information from Thwaites' footnote). Private Whitehouse, a member of the expedition, wrote that there was "No timber barron & broken praries on each Side" (Thwaites 1905, Vol. 7:169). When the company canoed down the Snake River, Whitehouse again noted that "the country is barron a high hills and clifts of rock on each Side of the River not even a tree to be Seen no place. a fiew willows along the Shores Some place" (Thwaites 1905, Vol. 7:170). Two decades later the botanist David Douglas likewise described the landscape along the Snake River in Washington as "an undulating dry, barren country." "The only thing I might say that renders it superior to the deserts of Arabia,"

wrote Douglas, “is abundance of good water” (Douglas 1914:200). In 1844, Charles Geyer described the valley of the Snake River as “sterile,” except for thickets of shrubs (Geyer 1846*c*:521). Similarly, between 1866 and 1871 both the railroad surveyor Philip Eastwick and the geologist Oliver Marcy wrote that the area around Lewiston was “destitute” of trees (Baird 1999*a*:Appendix 1, 1999*b*:49).

References to a barren landscape indicate that these observers saw little of interest or value in the canyons they passed through. The seasonal distribution of moisture characteristic of the Inland Northwest produced a type of grassland that was unfamiliar to Euroamericans. It is likely that their unfavorable assessment of the local vegetation was influenced by their limited knowledge of grasslands characterized by summer drought, in which grasses grow during cool weather when moisture is available, complete their annual cycle by summer, and aestivate during the hottest, driest part of the year.

In addition to the canyons, Geyer also explored the higher-elevation grasslands of the Palouse region. These were bordered by “spacious, open, grassy woods” of large, widely spaced ponderosa pines (*Pinus ponderosa*) in “elegant natural parks” (Geyer 1846*b*:286) and dotted with seasonally wet “spongy meadows” or “gamass” (camas, or *qem’es, Camassia quamash*) prairies. Geyer visited wet meadows on the high plains above the Coeur d’Alene and Clearwater Rivers in Idaho, and near Anatone, Washington. He noted that the when the camas was in full bloom, “these extensive plains” appeared “deep blue” (Geyer 1846*b*:299-300).

But the dominant vegetation that Geyer found in most of the watershed of the Palouse River was bunchgrass. “The grasses, as every where on the west side of the Rocky mountains, consist chiefly of the two species, *Triticum* 192, and *Festuca* 356; both are called ‘bunch-grass,’” wrote Geyer (1846*b*:287). In his catalogue, Geyer’s *Triticum* 192 is identified as “*Triticum*

repens," and *Festuca* 356 as *Festuca ovina* (Hooker 1853:18). These were undoubtedly *Pseudoroegneria spicata* spp. *spicata* [=*Agropyron spicatum*] and *Festuca idahoensis*, respectively. His lack of familiarity with caespitose grasses led Geyer to attribute the bunchgrass habit to mechanical fragmentation:

> It is erroneous to believe that these two species of grasses grow naturally so in separate tufts or bunches. The cause is a mechanical one, mainly owing to the annual fires, the great heat and drought during the latter part of summer, as well as the deep snows, the wet in the month of March accompanied by severe bare-frosts. . . . The heat commences about the 1st of July, when the parching rays of the sun suddenly dry up the blades of the grass . . . . When fires follow after the heat and drought . . . the borders of the tufts and their dry centers [will burn up], separating one tuft into several (Geyer 1846*b*:287-288, footnote).

Geyer recognized the forage potential of these grasses and saw a connection between their economic value and their phenology:

> The extreme heat . . . give to these grasses another great value, on which the importance of Upper Oregon [Washington and northern Idaho], as a grazing country, depends. The heat commences about the first of July, when the parching rays of the sun, suddenly dry up the blades of grass, and render it a wholesome hay. The centre of the tufts, however, remain green, waiting only for a little moisture to renew the growth, which also takes place about the middle of September, during a series of wet, foggy, cloudy days. Soon afterwards, frosts arrest the growing for a second time, and a deep (2-3 feet) snow covers it for five months. I have convinced myself that these grasses, thus checked and excited, keep green and grow a little, even under the snow. The frosts and snow render the dry blades brittle, and the horses and cattle eat it with greediness, mixed with the

> young green parts which they find in the centre of the tufts; digging for it with their feet day and night, remaining fat through the winter; and poor ones will, if healthy, get fat notwithstanding that labour (Geyer 1846*b*:287-288, footnote).

The economic value of the Palouse grasslands was also recognized by I.I. Stevens in his "Reports of explorations and surveys, to ascertain the most practicable and economical route for a railroad from the Mississippi River to the Pacific Ocean," which he made for the army between 1853 and 1855. Stevens' primary duty was concluding treaties with the Indians, but he also evaluated the region in terms of the economic potential of its natural resources. In late June of 1855, Stevens passed through bunchgrass vegetation on his way from Walla Walla to the Coeur d'Alene River. He remarked repeatedly on the "very fertile and rolling country," "a most beautiful prairie country, the whole of it adapted to agriculture" (Stevens 1860:197). Stevens repeatedly expressed his astonishment "at the luxuriance of the grass and the richness of the soil" in the Palouse watershed. "The whole view," he commented, "presents to the eye a vast bed of flowers in all their varied beauty" (Stevens 1860:199). Stevens considered the "Nez Percés country . . . exceedingly well adapted to grazing, and . . . for the most part a remarkably fine, arable country" (Stevens 1860:199).

The grasses and fertile soil of this "rolling table-land," "comparable to that of the prairies of Illinois," were not its only assets. "The bottom land of the Peluse has great resources," wrote Stevens. "It is very heavily timbered with pine, but with very little underbrush; and the country throughout is open, the grazing being most admirable" (Stevens 1860:200).

In these accounts, there is no hint of concern that the spread of agriculture and livestock grazing might harm the native vegetation of the region. In fact, not only did Geyer enthusiastically endorse the settlement of "Oregon" by Euroamericans, he also believed that the

Saptona (Nez Perce Indian) must be made to "understand that he must acquire property, to become independent of hunting, and that that property must be realized by rearing domestic animals and tilling the land" (Geyer 1846*c*:517).

By the 1890s, however, botanists were becoming less sanguine (Mack 1988). In a letter to Professor Charles Piper dated July 5, 1896, the Swedish botanist John Leiberg complained that the government was not providing sufficient funds to study the flora of the Columbia Basin before it disappeared. "We will never know the complete flora of these regions," he wrote. "Sheep and cattle are rapidly destroying the native plants and by the time private explorations reach these regions the flora will have been totally exterminated by such agencies" (Leiberg 1896). Piper and R. Kent Beattie's "*Flora the Palouse Region*," published in 1901, mentions numerous non-native annual grasses and other plant species that had become established and were increasing (Piper and Beattie 1901). In 1912, Weaver initiated studies of "the rapidly disappearing vegetation of this interesting region" because the prairie had "largely been broken up for the growing of wheat," and "only isolated tracts of the best developed prairies remain[ed] intact" (Weaver 1917:3). The changes that Leiberg, Piper, Beattie, and Weaver recorded were the beginnings of profound and pervasive alterations of Palouse and Canyon Grasslands. Several decades later Victor (1935), expressed concern about the effects of agriculture on erosion and hydrology, Daubenmire (1940, 1942) described the effects of grazing on the region's vegetation, and Buechner (1953), Dziedzic, and Buss (Dziedzic 1951; Buss and Dziedzic 1955) described the faunal changes that accompanied this transformation.

This brief historical review reveals a fundamental change in attitudes about the land and its resources that took place as (and primarily after) the landscapes of the Inland Northwest were transformed by changes in land use. Initially, explorers were concerned with maximizing the

economic productivity of the landscape, but as that transformation succeeded, scientists and resource managers became concerned about the consequences of that success.

Acknowledgments

This work was funded through a challenge cost-share agreement between the Bureau of Land Management, Cottonwood Resource Area, and the Palouse Land Trust of Moscow, Idaho. I thank Lawrence Stark, with Manuscripts, Archives, and Special Collections at the Washington State University Library; Karen Gray; and Thomas Cox for assistance in locating historical documents.

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