Downed Dead

A five-class scheme of Douglas-fir log decomposition used on the H. J. Andrews Experimental Forest in the western Cascades, Oregon. Adapted from Fogel et al. (Fogel, R., M. Ogawa and J. M. Trappe, 1972). Terrestrial decomposition: a synopsis. Unpubl. Internal. Rep. #135. US/IBP, Coniferous Forest Biome, Univ. Wash., Seattle. 12 p.).

Characteristic	Decay Class 1	2	3	4	5
Bark	intact	mostly intact	partially intact to sloughing	absent	absent
Twigs 3 cm	present	absent	absent	absent	absent
Large branches	present	present	present	present	absent
Exposed wood texture	intact	intact to partly soft	large, hard pieces	small soft blocky pieces	soft and powdery (when dry)
Portion of log on ground	support points	support points and sl. sagging	log is sagging	all	all
Exposed wood color	original	original	original to red-brown	light brown to reddish	red-brown to dark brown
Epiphytes	none	none	conifer seedlings (3 yr old)	moss and hemlock seedlings	moss and hemlock seedlings
Invading roots	none	none	conifer seedlings	in sapwood only	in sapwood and heartwood
Log shape	round	round	round	round	oval

Standing Dead

Snag characteristics	Stage of deterioration 1	2	3	4	5 1/
Limbs and branches	All present	Few limbs, no fine branches	Limb stubs only	Few or no stubs	None
Top	Pointed	Broken			
Diameter, broken top	Increasing at decreasing rate				
Height	Decreasing at decreasing rate				
Bark remaining %	100	Variable			20
Sapwood presence	Intact	Sloughing			Gone
Sapwood condition	Sound, incipient decay, hard, original color	Advanced decay, fibrous, firm to soft, light brown	fibrous, soft, light to reddish brown	Cubical, soft, reddish to dark brown	
Heartwood condition	Sound, hard, original color	Sound at base, incipient decay in outer edge of upper bole, hard, light to reddish brown	Incipient decay at base, advanced decay throughout upper bole, fibrous, hard to firm, reddish brown	Advanced decay at base. Sloughing from upper bole, fibrous to cubical, soft, dark reddish brown	Sloughing, cubical, soft, dark brown; or, fibrous, very soft, dark reddish brown, encased in hardened shell
Estimated age at which snags reach a deterioration state:					
3.6-7.2 in. d.b.h.2/	0-4	5-8	9-16	17	Fallen
7.6-18.8 in. d.b.h.3/	0-5	6-13	14-29	30-60	>60
>18.8 in. d.b.h.4/	0-6	7-18	19-50	51-125	>125

1/ Mostly remnant snags.
2/ Characteristic in Douglas-fir forests 80 years old; mean d.b.h. 5.4 ± 1.2 in.
3/ Characteristic in Douglas-fir forests 80-200 years old; mean d.b.h. 12.8 ± 2.8 in.
4/ Characteristic in Douglas-fir forests 200 years old; mean d.b.h. 28.8 ± 10.4 in.