Alaska Biomass Equations

(Equations Ver.: 11/5/02)

FIA currently stores calculated biomass based on regionally specific equations as two different variables, REGIONAL_DRYBIOT and REGIONAL_DRYBIOM. REGIONAL_DRYBIOT is the total aboveground biomass (pounds) of a sample tree 1.0 inch DBH or larger, including all tops and limbs (excluding foliage). REGIONAL_DRYBIOM is the merchantable stem biomass (pounds) of a tree 5.0 inches DBH or larger from a 1-foot stump to a minimum 4-inch top diameter and excludes bark. The below equations produce results in KILOGRAMS, these values are converted to pounds prior to storage in the NIMS database.

SPECIFICATIONS

Dry_kg – dry weight of above-ground whole tree (bole wood, bark, branches, twigs and foliage) in kilograms, given dbh in centimeters, squared (dsqr_cm) or meters, squared (dsqr_m) and total height in meters (height_m)

Green_kg = green weight of above-ground whole tree in kilograms, given dbh in centimeters, squared (dsqr_cm) or meters, squared (dsqr_m) and total height in meters (height_m)

Dry_kg_bole = dry weight of tree bole from a .3 m stump to a 2.5 cm top, without bark, in kilograms, given dbh in centimeters, squared (dsqr_cm) or meters, squared (dsqr_m) and total height in meters (height_m)

Green_kg_bole = green weight of tree bole from a .3 m stump to a 2.5 cm top, without bark, in kilograms, given dbh in centimeters, squared (dsqr_cm) or meters, squared (dsqr_m) and total height in meters (height_m)

Dry_kg_bark = dry weight of stem bark in kilograms, given dbh in centimeters, squared (dsqr_cm), or dbh in meters, squared (dsqr_m), and height in meters (height_m)

Green_kg_bark = green weight of stem bark in kilograms, given dbh in centimeters, squared (dsqr_cm), or dbh in meters, squared (dsqr_m), and height in meters (height_m)

Dry_kg_branches = dry weight of tree branches, in kilograms, given dbh in centimeters, squared (dsqr_cm) or meters, squared (dsqr_m) and total height in meters (height_m)

Green_kg_branches = green weight of tree branches, in kilograms, given dbh in centimeters, squared (dsqr_cm) or meters, squared (dsqr_m) and total height in meters (height_m)

Dry_kg_twigs_foliage = dry weight of tree twigs and leaves, in kilograms, given dbh in centimeters, squared (dsqr_cm) or meters, squared (dsqr_m) and total height in meters (height_m)

Green_kg_twigs_foliage = green weight of tree twigs and foliage, in kilograms, given dbh in centimeters, squared (dsqr_cm) or meters, squared (dsqr_m) and total height in meters (height_m)

Green_kg_dead_branches = air-dry weight of tree dead branches, in kilograms, given dbh in centimeters, squared (dsqr_cm) or meters, squared (dsqr_m) and total height in meters (height_m)

Dsqr_m – dbh in meters, squared
Dsqr_cm – dbh in centimeters, squared

Subdivision 1 – currently used by PNW-FIA (5/4/12) = Coastal Alaska

Subdivision 2 – not currently used by FIA = Interior Alaska
Unit 3 – not currently used by FIA = Interior Alaska south and east of the Alaska Range
Unit 4 – not currently used by FIA = Interior Alaska north and west of the Alaska Range

SOFTWOOD DRY WEIGHT WHOLE-TREE BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
11	Pacific silver fir	86	--	--
19	Subalpine fir	97	--	--
42	Alaska-cedar	54	--	--
71	Tamarack	--	--	76
94	White spruce	1	1	1
95	Black spruce	12	12	12
98	Sitka spruce	23	--	--
108	Lodgepole pine	65	--	--
242	Western redcedar	44	--	--
263	Western hemlock	34	--	--
264	Mountain hemlock	34	--	--

SOFTWOOD GREEN WEIGHT WHOLE-TREE BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
11	Pacific silver fir	87	--	--
19	Subalpine fir	98	--	--
42	Alaska-cedar	55	--	--
71	Tamarack	--	--	77
94	White spruce	2	2	2
95	Black spruce	13	13	13
98	Sitka spruce	24	--	--
108	Lodgepole pine	66	--	--
242	Western redcedar	45	--	--
263	Western hemlock	35	--	--
264	Mountain hemlock	35	--	--

SOFTWOOD DRY WEIGHT BOLE BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
11	Pacific silver fir	88	--	--
19	Subalpine fir	99	--	--
42	Alaska-cedar	56	--	--
71	Tamarack	--	--	78
94	White spruce	3	3	3
95	Black spruce	14	14	14
98	Sitka spruce	25	--	--
108	Lodgepole pine	67	--	--
242	Western redcedar	46	--	--
263	Western hemlock	36	--	--
264	Mountain hemlock	36	--	--

SOFTWOOD GREEN WEIGHT BOLE BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
11	Pacific silver fir	89	--	--
19	Subalpine fir	100	--	--
42	Alaska-cedar	57	--	--
71	Tamarack	--	--	79
94	White spruce	4	4	4
95	Black spruce	15	15	15
98	Sitka spruce	26	--	--
108	Lodgepole pine	68	--	--
242	Western redcedar	47	--	--
263	Western hemlock	37	--	--
264	Mountain hemlock	37	--	--

SOFTWOOD DRY WEIGHT BARK BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
11	Pacific silver fir	90	--	--
19	Subalpine fir	101	--	--
42	Alaska-cedar	58	--	--
71	Tamarack	--	--	80
94	White spruce	5	5	5
95	Black spruce	16	16	16
98	Sitka spruce	27	--	--
108	Lodgepole pine	69	--	--
242	Western redcedar	48	--	--
263	Western hemlock	38	--	--
264	Mountain hemlock	38	--	--

SOFTWOOD GREEN WEIGHT BARK BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
11	Pacific silver fir	91	--	--
19	Subalpine fir	102	--	--
42	Alaska-cedar	59	--	--
71	Tamarack	--	--	81
94	White spruce	6	6	6
95	Black spruce	17	17	17
98	Sitka spruce	28	--	--
108	Lodgepole pine	70	--	--
242	Western redcedar	49	--	--
263	Western hemlock	39	--	--
264	Mountain hemlock	39	--	--

SOFTWOOD DRY WEIGHT BRANCHES BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
11	Pacific silver fir	92	--	--
19	Subalpine fir	103	--	--
42	Alaska-cedar	60	--	--
71	Tamarack	--	--	82
94	White spruce	7	7	7
95	Black spruce	18	18	18
98	Sitka spruce	29	--	--
108	Lodgepole pine	71	--	--
242	Western redcedar	50	--	--
263	Western hemlock	40	--	--
264	Mountain hemlock	40	--	--

SOFTWOOD GREEN WEIGHT BRANCHES BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
11	Pacific silver fir	93	--	--
19	Subalpine fir	104	--	--
42	Alaska-cedar	61	--	--
71	Tamarack	--	--	83
94	White spruce	8	8	8
95	Black spruce	19	19	19
98	Sitka spruce	30	--	--
108	Lodgepole pine	72	--	--
242	Western redcedar	51	--	--
263	Western hemlock	41	--	--
264	Mountain hemlock	41	--	--

SOFTWOOD DRY WEIGHT TWIGS AND FOLIAGE BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
11	Pacific silver fir	94	--	--
19	Subalpine fir	105	--	--
42	Alaska-cedar	62	--	--
71	Tamarack	--	--	84
94	White spruce	9	9	9
95	Black spruce	20	20	20
98	Sitka spruce	31	--	--
108	Lodgepole pine	73	--	--
242	Western redcedar	52	--	--
263	Western hemlock	42	--	--
264	Mountain hemlock	42	--	--

SOFTWOOD GREEN WEIGHT TWIGS AND FOLIAGE BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
11	Pacific silver fir	95	--	--
19	Subalpine fir	106	--	--
42	Alaska-cedar	63	--	--
71	Tamarack	--	--	85
94	White spruce	10	10	10
95	Black spruce	21	21	21
98	Sitka spruce	32	--	--
108	Lodgepole pine	74	--	--
242	Western redcedar	53	--	--
263	Western hemlock	43	--	--
264	Mountain hemlock	43	--	--

SOFTWOOD GREEN WEIGHT DEAD BRANCHES BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
11	Pacific silver fir	96	--	--
19	Subalpine fir	107	--	--
42	Alaska-cedar	64	--	--
71	Tamarack	--	--	n.a.
94	White spruce	11	11	11
95	Black spruce	22	22	22
98	Sitka spruce	33	--	--
108	Lodgepole pine	75	--	--
242	Western redcedar	n.a.	--	--
263	Western hemlock	n.a.	--	--
264	Mountain hemlock	n.a.	--	--

n.a. = not available

HARDWOOD DRY WEIGHT WHOLE-TREE BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
310	Maple sp.	119	--	--
351	Red alder	141	--	--
375	Paper birch	119	119	119
660	Apple	119	--	--
746	Quaking aspen	108	108	108
747	Cottonwood	130	130	130
920	Willow sp.	141	141	141

HARDWOOD GREEN WEIGHT WHOLE-TREE BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
310	Maple sp.	120	--	--
351	Red alder	142	--	--
375	Paper birch	120	120	120
660	Apple	120	--	--
746	Quaking aspen	109	109	109
747	Cottonwood	131	131	131
920	Willow sp.	142	142	142

HARDWOOD DRY WEIGHT BOLE BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
310	Maple sp.	121	--	--
351	Red alder	143	--	--
375	Paper birch	121	121	121
660	Apple	121	--	--
746	Quaking aspen	110	110	110
747	Cottonwood	132	132	132
920	Willow sp.	143	143	143

HARDWOOD GREEN WEIGHT BOLE BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
310	Maple sp.	122	--	--
351	Red alder	144	--	--
375	Paper birch	122	122	122
660	Apple	122	--	--
746	Quaking aspen	111	111	111
747	Cottonwood	133	133	133
920	Willow sp.	144	144	144

HARDWOOD DRY WEIGHT BARK BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
310	Maple sp.	123	--	--
351	Red alder	145	--	--
375	Paper birch	123	123	123
660	Apple	123	--	--
746	Quaking aspen	112	112	112
747	Cottonwood	134	134	134
920	Willow sp.	145	145	145

HARDWOOD GREEN WEIGHT BARK BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
310	Maple sp.	124	--	--
351	Red alder	146	--	--
375	Paper birch	124	124	124
660	Apple	124	--	--
746	Quaking aspen	113	113	113
747	Cottonwood	135	135	135
920	Willow sp.	146	146	146

HARDWOOD DRY WEIGHT BRANCH BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
310	Maple sp.	125	--	--
351	Red alder	147	--	--
375	Paper birch	125	125	125
660	Apple	125	--	--
746	Quaking aspen	114	114	114
747	Cottonwood	136	136	136
920	Willow sp.	147	147	147

*Aspen branches included with twig and foliage equation

HARDWOOD GREEN WEIGHT BRANCH BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
310	Maple sp.	126	--	--
351	Red alder	148	--	--
375	Paper birch	126	126	126
660	Apple	126	--	--
746	Quaking aspen	115	115	115
747	Cottonwood	137	137	137
920	Willow sp.	148	148	148

*Aspen branches included with twig and foliage equation

HARDWOOD DRY WEIGHT, TWIG, AND FOLIAGE BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
310	Maple sp.	127	--	--
351	Red alder	149	--	--
375	Paper birch	127	127	127
660	Apple	127	--	--
746	Quaking aspen	*	*	*
747	Cottonwood	138	138	138
920	Willow sp.	149	149	149

*Aspen twig and foliage included with branch equation

HARDWOOD GREEN WEIGHT TWIG, AND FOLIAGE BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
310	Maple sp.	128	--	--
351	Red alder	150	--	--
375	Paper birch	128	128	128
660	Apple	128	--	--
746	Quaking aspen	*	*	*
747	Cottonwood	139	139	139
920	Willow sp.	150	150	150

*Aspen twig and foliage included with branch equation

HARDWOOD AIR-DRY WEIGHT DEAD BRANCHES BIOMASS EQUATION ASSIGNMENTS

Species Code	Common name	Subdivision 1	Subdivision 2 Unit 3	Subdivision 2 Unit 4
310	Maple sp.	129	--	--
351	Red alder	151	--	--
375	Paper birch	129	129	129
660	Apple	129	--	--
746	Quaking aspen	118	118	118
747	Cottonwood	140	140	140
920	Willow sp.	151	151	151

BIOMASS EQUATIONS

Equation 1

Manning INF-REP-BC-X-250, Pg 30
* includes green weight of dead branches

dry_kg = 1.6914 + 0.01891 * dsqr_cm * height_m

Equation 2

Manning INF-REP-BC-X-250, Pg 25

green_kg = 3.735 + 0.03632 * dsqr_cm * height_m

Equation 3

Manning INF-REP-BC-X-250, Pg 26

dry_kg_bole = 0.277 + 0.0124 * dsqr_cm * height_m

Equation 4

Manning INF-REP-BC-X-250, Pg 20

green_kg_bole = 0.6956 + 0.02402 * dsqr_cm * height_m

Equation 5

Manning INF-REP-BC-X-250, Pg 27

Dry_kg_bark = 0.1506 + 0.00193 * dsqr_cm * height_m

Equation 6

Manning INF-REP-BC-X-250, Pg 21

Green_kg_bark = 0.3509 + 0.003890 * dsqr_cm * height_m

Equation 7

Manning INF-REP-BC-X-250, Pg 28

Dry_kg_branches = 0.2519 + 0.001191 * dsqr_cm * height_m

Equation 8

Manning INF-REP-BC-X-250, Pg 22

green_kg_branches = 0.4995 + 0.00214 * dsqr_cm * height_m

Equation 9

Manning INF-REP-BC-X-250, Pg 29

Dry_kg_twigs_foliage = 0.9265 + 0.00241 * dsqr_cm * height_m

Equation 10

Manning INF-REP-BC-X-250, Pg 23

green_kg_twigs_foliage = 2.1036 + 0.00535 * dsqr_cm * height_m

Equation 11

Manning INF-REP-BC-X-250, Pg 24

green_kg_dead_branches = 0.0854 + 0.00093 * dsqr_cm * height_m

Equation 12

Manning INF-REP-BC-X-250, Pg 52

dry_kg = 1.6426 + 0.02509 * dsqr_cm * height_m

*includes green weight dead branches

Equation 13

Manning INF-REP-BC-X-250, Pg 47

green_kg = 3.4601 + 0.04308 * dsqr_cm * height_m

Equation 14

Manning INF-REP-BC-X-250, Pg 48

dry_kg_bole = 0.3170 + 0.01550 * dsqr_cm * height_m

Equation 15

Manning INF-REP-BC-X-250, Pg 42

green_kg_bole = 0.7238 + 0.02646 * dsqr_cm * height_m

Equation 16

Manning INF-REP-BC-X-250, Pg 49

Dry_kg_bark = 0.1696 + 0.00284 * dsqr_cm * height_m

Equation 17

Manning INF-REP-BC-X-250, Pg 43

green_kg_bark = 0.3603 + 0.00516 * dsqr_cm * height_m

Equation 18

Manning INF-REP-BC-X-250, Pg 50

dry_kg_branches = 0.2376 + 0.00143 * dsqr_cm * height_m

Equation 19

Manning INF-REP-BC-X-250, Pg 44

green_kg_branches = 0.4796 + 0.00248 * dsqr_cm * height_m

Equation 20

Manning INF-REP-BC-X-250, Pg 51

Dry_kg_twigs_foliage = 0.8662 + 0.00322 * dsqr_cm * height_m

Equation 21

Manning INF-REP-BC-X-250, Pg 45

green_kg_twigs_foliage = 1.8442 + 0.00693 * dsqr_cm * height_m

Equation 22

Manning INF-REP-BC-X-250, Pg 46

green_kg_dead_branches = 0.0522 + 0.00206 * dsqr_cm * height_m

Equation 23

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE'
CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 2

dry_kg = 17.6 + 172.1 * dsqr_m * height_m

Equation 24

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE'
CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 2

green_kg = 39.3 + 362.4 * dsqr_m * height_m

Equation 25

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE'
CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 2

dry_kg_bole = -1.0 + 117.4 * dsqr_m * height_m

Equation 26

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE'
CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 2

green_kg_bole = 2.0 + 252.1 * dsqr_m * height_m

Equation 27

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE'
CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 2

dry_kg_bark = -1.3 + 12.6 * dsqr_m * height_m

Equation 28

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE'
CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 2

green_kg_bark = 3.1 + 28.8 * dsqr_m * height_m

Equation 29

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 2 * DBRANH1 + DBRAN2

dry_kg_branches = 7.0 + 17.2* dsqr_m * height_m

Equation 30

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 2 *FBRAN1 + FBRAN2

green_kg_branches = 12.8 + 31.2 * dsqr_m * height_m

Equation 31

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 2 * DBRANH3 + DFOLI

dry_kg_twigs_foliage = 10.3 + 24.9 * dsqr_m * height_m

Equation 32

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 2 *FBRAN3 + FFOLI

green_kg_twigs_foliage = 21.4 + 50.4 * dsqr_m * height_m

Equation 33

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 2

green_kg_dead_branches = 1.0 + 1.8 * dsqr_m * height_m

Equation 34

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

dry_kg = 0.497 + 0.02113 * dsqr_cm * height_m

Equation 35

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

green_kg = -0.007 + 0.03742 * dsqr_cm * height_m

Equation 36

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

dry_kg_bole = 0.362 + 0.01145 * dsqr_cm * height_m

Equation 37

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

green_kg_bole = 0.083 + 0.02020 * dsqr_cm * height_m

Equation 38

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

Dry_kg_bark = -0.025 + 0.00134 * dsqr_cm * height_m

Equation 39

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

Green_kg_bark = -0.616 + 0.00177 * dsqr_cm * height_m

Equation 40

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

Dry_kg_branches = 0.047 + 0.00413 * dsqr_cm * height_m

Equation 41

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

green_kg_branches = 0.213 + 0.00637 * dsqr_cm * height_m

Equation 42

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

Dry_kg_twigs_foliage = 0.113+ 0.00421 * dsqr_cm * height_m

Equation 43

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

green_kg_twigs_foliage = 0.313 + 0.00908 * dsqr_cm * height_m

Equation 44

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

dry_kg = 1.270 + 0.01501 * dsqr_cm * height_m

Equation 45

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

green_kg = 2.362+ 0.02583 * dsqr_cm * height_m

Equation 46

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

dry_kg_bole = 0.452 + 0.00697 * dsqr_cm * height_m

Equation 47

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

green_kg_bole = 0.818 + 0.01117 * dsqr_cm * height_m

Equation 48

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

Dry_kg_bark = 0.336 + 0.00058 * dsqr_cm * height_m

Equation 49

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

Green_kg_bark = 0.595 + 0.00083 * dsqr_cm * height_m

Equation 50

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

Dry_kg_branches = 0.199 + 0.00381 * dsqr_cm * height_m

Equation 51

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

green_kg_branches = 0.198 + 0.00621 * dsqr_cm * height_m

Equation 52

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

dry_kg_twigs_foliage = 0.298 + 0.00365 * dsqr_cm * height_m

Equation 53

SHAW, D.L., JR., BIOMASS EQUATIONS FOR DOUGLAS-FIR, WESTERN HEMLOCK AND RED CEDAR IN WASHINGTON AND OREGON. IN: FOREST RESOURCE INVENTORIES WORKSHOP PROCEEDINGS, COLO. STATE UNIV., FT. COLLINS, CO: 1979 JULY 23-26. VOL II, PG 772

green_kg_twigs_foliage = 0.751+ 0.00762 * dsqr_cm * height_m

Equation 54

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 17

dry_kg = 9.2 + 191.6 * dsqr_m * height_m

Equation 55

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 17

green_kg = 29.6 + 296.5 * dsqr_m * height_m

Equation 56

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 17

dry_kg_bole = -4.0 + 166.2 * dsqr_m * height_m

Equation 57

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 17

$$green\_kg\_bole = 2.1 + 251.6 * dsqr\_m * height\_m$$

Equation 58

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 17

$$dry\_kg\_bark = 1.8 + 9.6 * dsqr\_m * height\_m$$

Equation 59

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 17

$$green\_kg\_bark = 5.1 + 18.1 * dsqr\_m * height\_m$$

Equation 60

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 17 * DBRANH1 + DBRAN2

$$dry\_kg\_branches = 4.1 + 8.7 * dsqr\_m * height\_m$$

Equation 61

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 17 *FBRAN1 + FBRAN2

$$green\_kg\_branches = 7.6 + 14.7 * dsqr\_m * height\_m$$

Equation 62

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 17 * DBRANH3 + DFOLI

$$dry\_kg\_twigs\_foliage = 7.4 + 7.1 * dsqr\_m * height\_m$$

Equation 63

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 17
*FBRAN3 + FFOLI

green_kg_twigs_foliage = 14.8 + 12.2 * dsqr_m * height_m

Equation 64

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 17

green_kg_dead_branches = 0.3 + 1.3 * dsqr_m * height_m

Equation 65

Manning INF-REP-BC-X-250, Pg 41
* includes green weight of dead branches

dry_kg = 1.8962 + 0.02183 * dsqr_cm * height_m

Equation 66

Manning INF-REP-BC-X-250, Pg 36

green_kg = 6.1298 + 0.04031 * dsqr_cm * height_m

Equation 67

Manning INF-REP-BC-X-250, Pg 37

dry_kg_bole = 0.6301 + 0.01568 * dsqr_cm * height_m

Equation 68

Manning INF-REP-BC-X-250, Pg 31

green_kg_bole = 2.4865 + 0.02894 * dsqr_cm * height_m

Equation 69

Manning INF-REP-BC-X-250, Pg 38

Dry_kg_bark = 0.3064 + 0.00153 * dsqr_cm * height_m

Equation 70

Manning INF-REP-BC-X-250, Pg 32

Green_kg_bark = 0.9234 + 0.00302 * dsqr_cm * height_m

Equation 71

Manning INF-REP-BC-X-250, Pg 39

Dry_kg_branches = 0.2614 + 0.00171 * dsqr_cm * height_m

Equation 72

Manning INF-REP-BC-X-250, Pg 33

green_kg_branches = 0.4259 + 0.00353 * dsqr_cm * height_m

Equation 73

Manning INF-REP-BC-X-250, Pg 40

Dry_kg_twigs_foliage = 1.1011 + 0.00142 * dsqr_cm * height_m

Equation 74

Manning INF-REP-BC-X-250, Pg 34

green_kg_twigs_foliage = 2.6805 + 0.003319 * dsqr_cm * height_m

Equation 75

Manning INF-REP-BC-X-250, Pg 35

green_kg_dead_branches = -0.3864 + 0.00149 * dsqr_cm * height_m

Equation 76

T.SINGH NOTE #257 NO FOREST RESEARCH CENTER EDMONTON, CANADA PG 17

dry_kg = 6.32169 + 0.01728 * dsqr_cm * height_m

Equation 77

T.SINGH NOTE #257 NO FOREST RESEARCH CENTER EDMONTON, CANADA PG 17 Conversion to green weight based on 110% moisture content

dry_kg = (6.32169 + 0.01728 * dsqr_cm * height_m) * 2.11

Equation 78

T.SINGH NOTE #257 NO FOREST RESEARCH CENTER EDMONTON, CANADA PG 17

dry_kg_bole = (-3.11604 + 0.01165 * dsqr_cm * height_m)
+ (5.98493 + 0.00008* dsqr_cm * height_m)

Equation 79

T.SINGH NOTE #257 NO FOREST RESEARCH CENTER EDMONTON, CANADA PG 17 Conversion to green weight based on 110% moisture content

green_kg_bole = [(-3.11604 + 0.01165 * dsqr_cm * height_m)
+ (5.98493 + 0.00008* dsqr_cm * height_m)] * 2.11

Equation 80

T.SINGH NOTE #257 NO FOREST RESEARCH CENTER EDMONTON, CANADA PG 17

dry_kg_bark = (0.65323 + 0.00123 * dsqr_cm * height_m)
+ (1.15548 + 0.00002* dsqr_cm * height_m)

Equation 81

T.SINGH NOTE #257 NO FOREST RESEARCH CENTER EDMONTON, CANADA PG 17 Conversion to green weight based on 110% moisture content

green_kg_bark = [(0.65323 + 0.00123 * dsqr_cm * height_m)
+ (1.15548 + 0.00002* dsqr_cm * height_m)] * 2.11

Equation 82

T.SINGH NOTE #257 NO FOREST RESEARCH CENTER EDMONTON, CANADA PG 17 Conversion to green weight based on 110% moisture content

dry_kg_branches = (-1.25157 + 0.00111 * dsqr_cm * height_m)
+ (-0.34731 + 0.00030 * dsqr_cm * height_m)

Equation 83

T.SINGH NOTE #257 NO FOREST RESEARCH CENTER EDMONTON, CANADA PG 17 Conversion to green weight based on 110% moisture content

green_kg_branches = [(-1.25157 + 0.00111 * dsqr_cm * height_m)
+ (-0.34731 + 0.00030 * dsqr_cm * height_m)] * 2.11

Equation 84

T.SINGH NOTE #257 NO FOREST RESEARCH CENTER EDMONTON, CANADA PG 17

dry_kg_twigs_foliage = (2.01016 + 0.00137 * dsqr_cm * height_m)
+ (0.97374 + 0.00070 * dsqr_cm * height_m)

Equation 85

T.SINGH NOTE #257 NO FOREST RESEARCH CENTER EDMONTON, CANADA PG 17 Conversion to green weight based on 110% moisture content

dry_kg_twigs_foliage = [(2.01016 + 0.00137 * dsqr_cm * height_m)
+ (0.97374 + 0.00070 * dsqr_cm * height_m)] * 2.11

Equation 86

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 9

dry_kg = 12.8 + 183.6 * dsqr_m * height_m

Equation 87

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 9

green_kg = 37.5 + 397.9 * dsqr_m * height_m

Equation 88

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 9

dry_kg_bole = 1.4 + 122.9 * dsqr_m * height_m

Equation 89

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 9

green_kg_bole = 13.1.0 + 274.4 * dsqr_m * height_m

Equation 90

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 9

dry_kg_bark = 1.0 + 15.6 * dsqr_m * height_m

Equation 91

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 9

green_kg_bark = 2.6 + 32.8 * dsqr_m * height_m

Equation 92

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 9 * DBRANH1 + DBRAN2

dry_kg_branches = 3.3 + 17.8 * dsqr_m * height_m

Equation 93

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 9 *FBRAN1 + FBRAN2

green_kg_branches = 6.1 + 35.7 * dsqr_m * height_m

Equation 94

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 9 * DBRANH3 + DFOLI

dry_kg_twigs_foliage = 7.1 + 27.4 * dsqr_m * height_m

Equation 95

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 9 *FBRAN3 + FFOLI

green_kg_twigs_foliage = 15.6 + 55.0 * dsqr_m * height_m

Equation 96

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE'
CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 9

green_kg_dead_branches = 0.8 + 0.9 * dsqr_m * height_m

Equation 97

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE'
CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 16

dry_kg = 14.3 + 186.2 * dsqr_m * height_m

Equation 98

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE'
CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 16

green_kg = 33.6 + 367.2 * dsqr_m * height_m

Equation 99

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE'
CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 16

dry_kg_bole = 4.0 + 107.4 * dsqr_m * height_m

Equation 100

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE'
CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 16

green_kg_bole = 11.4 + 217.0 * dsqr_m * height_m

Equation 101

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE'
CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 16

dry_kg_bark = 1.0 + 17.2 * dsqr_m * height_m

Equation 102

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 16

green_kg_bark = 4.2 + 32.0 * dsqr_m * height_m

Equation 103

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 16 * DBRANH1 + DBRAN2

dry_kg_branches = 1.3 + 33.3 * dsqr_m * height_m

Equation 104

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 16 *FBRAN1 + FBRAN2

green_kg_branches = 2.2 + 61.9 * dsqr_m * height_m

Equation 105

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 16 * DBRANH3 + DFOLI

dry_kg_twigs_foliage = 8.0 + 28.4 * dsqr_m * height_m

Equation 106

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 16 *FBRAN3 + FFOLI

green_kg_twigs_foliage = 15.9 + 56.3 * dsqr_m * height_m

Equation 107

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 16

green_kg_dead_branches = 0.6 + 7.9 * dsqr_m * height_m

Equation 108

Manning INF-REP-BC-X-250, Pg 60

dry_kg = 0.4407 + 0.0187 * dsqr_cm * height_m

Equation 109

Manning INF-REP-BC-X-250, Pg 56

green_kg = 1.3872 + 0.0357 * dsqr_cm * height_m

Equation 110

Manning INF-REP-BC-X-250, Pg 57

dry_kg_bole = 0.0983 + 0.0128 * dsqr_cm * height_m

Equation 111

Manning INF-REP-BC-X-250, Pg 53

green_kg_bole = 0.3076 + 0.0234 * dsqr_cm * height_m

Equation 112

Manning INF-REP-BC-X-250, Pg 58

Dry_kg_bark = 0.1281 + 0.0029 * dsqr_cm * height_m

Equation 113

Manning INF-REP-BC-X-250, Pg 54

Green_kg_bark = 0.3711 + 0.0059 * dsqr_cm * height_m

Equation 114

Manning INF-REP-BC-X-250, Pg 59

Dry_kg_branches_twigs_foliage = 0.2143 + 0.0031 * dsqr_cm * height_m

Equation 115

Manning INF-REP-BC-X-250, Pg 55

green_kg_branches_twigs_foliage = 0.7069 + 0.0064 * dsqr_cm * height_m

Equation 116 – 117 – not used, components included in equation 115

Equation 118

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE'
CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 20

green_kg_dead_branches = 0.6 + 2.4 * dsqr_m * height_m

Equation 119

ALEMDAG INF REP PI-X-46,1984, ONTARIO PG 28
OM/GM RATIO, PG 34, 40

dry_kg = 0.023468 * dsqr_cm * height_m

Equation 120

ALEMDAG INF REP PI-X-46,1984, ONTARIO PG 28
OM/GM RATIO, PG 34, 40

green_kg = (0.023468 * dsqr_cm * height_m) * 1.7422

Equation 121

ALEMDAG INF REP PI-X-46,1984, ONTARIO PG 28
OM/GM RATIO, PG 34, 40

dry_kg_bole = 0.016211 * dsqr_cm * height_m

Equation 122

ALEMDAG INF REP PI-X-46,1984, ONTARIO PG 28
OM/GM RATIO, PG 34, 40

green_kg_bole = (0.016211 * dsqr_cm * height_m) * 1.7452

Equation 123

ALEMDAG INF REP PI-X-46,1984, ONTARIO PG 28
OM/GM RATIO, PG 34, 40

Dry_kg_bark = 0.002873 * dsqr_cm * height_m

Equation 124

ALEMDAG INF REP PI-X-46,1984, ONTARIO PG 28
OM/GM RATIO, PG 34, 40

green_kg_bark = (0.002873 * dsqr_cm * height_m) * 1.5083

Equation 125

ALEMDAG INF REP PI-X-46,1984, ONTARIO PG 28
OM/GM RATIO, PG 34, 40

Dry_kg_branches = 0.003525 * dsqr_cm * height_m

Equation 126

ALEMDAG INF REP PI-X-46,1984, ONTARIO PG 28
OM/GM RATIO, PG 34, 40

green_kg_branches = (0.003525 * dsqr_cm * height_m) * 1.7391

Equation 127

ALEMDAG INF REP PI-X-46,1984, ONTARIO PG 28
OM/GM RATIO, PG 34, 40

Dry_kg_twigs_foliage = 0.000859 * dsqr_cm * height_m

Equation 128

ALEMDAG INF REP PI-X-46,1984, ONTARIO PG 28
OM/GM RATIO, PG 34, 40

green_kg_twigs_foliage = (0.000859 * dsqr_cm * height_m) * 2.500

Equation 129

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE'
CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 21

dry_kg = 0.5 + 0.4 * dsqr_m * height_m

Equation 130

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 18

dry_kg = 7.4 + 156.4 * dsqr_m * height_m

Equation 131

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 18

green_kg = 16.2 + 312.7 * dsqr_m * height_m

Equation 132

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 2

dry_kg_bole = 2.3 + 97.5 * dsqr_m * height_m

Equation 133

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 18

green_kg_bole = 5.9 + 199.2 * dsqr_m * height_m

Equation 134

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 18

dry_kg_bark = 1.2 + 15.5 * dsqr_m * height_m

Equation 135

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 18

green_kg_bark = 4.1 + 32.4 * dsqr_m * height_m

Equation 136

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 18 * DBRANH1 + DBRAN2

dry_kg_branches = 1.9 + 35.5 * dsqr_m * height_m

Equation 137

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 18 *FBRAN1 + FBRAN2

green_kg_branches = 2.8 + 65.4 * dsqr_m * height_m

Equation 138

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 18 * DBRANH3 + DFOLI

dry_kg_twigs_foliage = 2.1 + 7.8 * dsqr_m * height_m

Equation 139

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 18 *FBRAN3 + FFOLI

green_kg_twigs_foliage = 3.3 + 15.6 * dsqr_m * height_m

Equation 140

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 18

green_kg_dead_branches = 0.6 + 2.2 * dsqr_m * height_m

Equation 141

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 19

dry_kg = 4.8 + 206.5 * dsqr_m * height_m

Equation 142

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 19

green_kg = 15.9 + 378.9 * dsqr_m * height_m

Equation 143

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 19

dry_kg_bole = -4.6 + 159.7 * dsqr_m * height_m

Equation 144

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 19

green_kg_bole = -5.9 + 294.6 * dsqr_m * height_m

Equation 145

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 19

dry_kg_bark = -1.2 + 24.0 * dsqr_m * height_m

Equation 146

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 19

green_kg_bark = -0.5 + 41.2 * dsqr_m * height_m

Equation 147

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 19 * DBRANH1 + DBRAN2

dry_kg_branches = 7.1 + 19.4 * dsqr_m * height_m

Equation 148

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 19 *FBRAN1 + FBRAN2

green_kg_branches = 13.2 + 36.1 * dsqr_m * height_m

Equation 149

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE' CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 19 * DBRANH3 + DFOLI

dry_kg_twigs_foliage = 3.5+ 3.4 * dsqr_m * height_m

Equation 150

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE'
CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 19
*FBRAN3 + FFOLI

green_kg_twigs_foliage = 9.1 + 6.9 * dsqr_m * height_m

Equation 151

J.T. STANDISH 1983 PROJ 7952 TALISMAN LAND RESOURCE'
CONSULTANTS 100-842 THURLOW ST, VANCOUVER, BC APPENDIX A - PG 19

green_kg_dead_branches = -0.6 + 8.5 * dsqr_m * height_m

BIOMASS EQUATION SOURCES

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