



United States Department of Agriculture



BEAUTIFUL SOILS

2019 Soils Planner

*"Nature is painting for us,
day after day,
pictures of infinite beauty."*

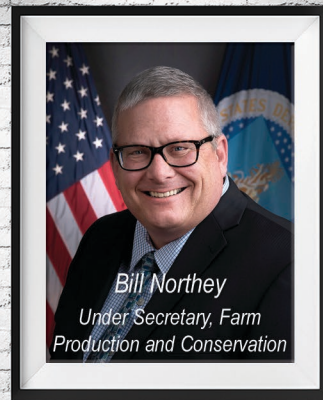
~ John Ruskin

Natural
Resources
Conservation
Service

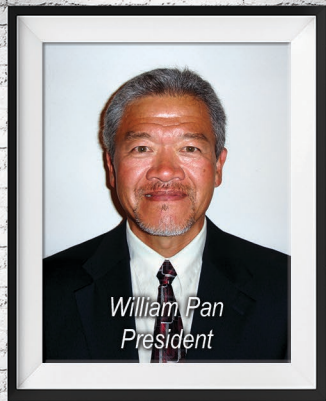
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Albert Einstein is quoted as saying “After a certain high level of technical skill is achieved, science and art tend to coalesce in esthetics, plasticity, and form. The greatest scientists are always artists as well.” It should therefore come as no surprise that the soil scientists of the USDA Natural Resources Conservation Service (NRCS) have found and recorded great beauty. They follow a calling to provide the best available science while serving the NRCS mission of helping people help the land. A recognition of the beauty of soil is an inevitable result of the pursuit of deep understanding of the science governing the resource. We hope you will enjoy the splendor we have seen as we provide some insight into fundamental relationships between the landscape and soil.



**NATURAL RESOURCES
CONSERVATION SERVICE**



William Pan
President

**SOIL SCIENCE SOCIETY
OF AMERICA**

The mission of the Soil Science Society of America is to enhance the sustainability of soils, the environment, and society and to advance the discovery, practice, and profession of soil science. As part of this mission, the Society encourages public education regarding the importance of soil. Soil is a critical resource deserving of everyday attention. One way to remind ourselves of the importance of soil is to take the time to notice it and remember its place on the landscape. Beautiful mountains? Soil. Magnificent coastline? Soil. Lush forest? Soil. Productive lands? Soil. The beauty of the natural world is firmly dependent on the soil to support, produce, filter, and sustain. When you see wonders of the world, take a moment to consider the role of soil in helping them happen.





JANUARY

December 2018
S M T W T F S
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2 3 4 5 6 7 8
9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30 31

February 2019
S M T W T F S
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3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28

▲ Volcanic terranes of igneous rock and ash lead to the formation of a variety of soil types. Volcanic ash soils (Andisols) are commonly stratified and contain paleosols that record the volcanic history and paleoenvironmental conditions of the region.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<p><i>"How can I stand on the ground every day and not feel its power?"</i> ~ William Bryant Logan</p>		<p>1</p> <p>New Year's Day</p>	<p>2</p>	<p>3</p>	<p>4</p>	<p>5</p>
<p>6</p>	<p>7</p>	<p>8</p>	<p>9</p>	<p>10</p>	<p>11</p>	<p>12</p>
<p>13</p>	<p>14</p>	<p>15</p>	<p>16</p>	<p>17</p>	<p>18</p>	<p>19</p>
<p>20</p>	<p>21</p> <p>Martin Luther King Jr. Day</p>	<p>22</p>	<p>23</p>	<p>24</p>	<p>25</p>	<p>26</p>
<p>27</p>	<p>28</p>	<p>29</p>	<p>30</p>	<p>31</p>	<p><i>"We might say that the earth has the spirit of growth; that its flesh is the soil."</i> ~ Leonardo da Vinci</p>	



FEBRUARY

January 2019

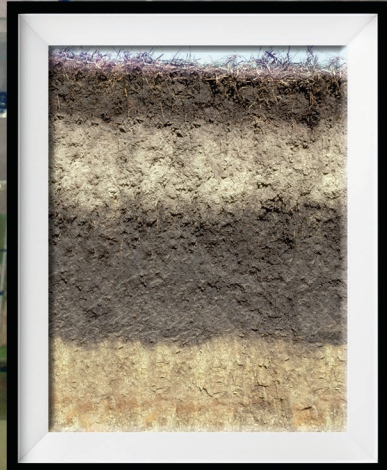
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27	28	29	30	31		

March 2019

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
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24	25	26	27	28	29	30
31						

▲ Just as terrestrial soils support agriculture, subaqueous soils support aquaculture. Both also support ecosystems and require management for issues such as the spread of invasive species. These soils (Wassents and Wassists) provide information about soil genesis.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<i>“Be it deep or shallow, red or black, sand or clay, the soil is the link between the rock core of the earth and the living things on its surface. It is the foothold for the plants we grow.”</i> ~ Roy W. Simonson					1	2
3	4	5 Chinese New Year	6	7	8	9
10	11	12 Lincoln's Birthday	13	14 Valentine's Day	15	16
17	18 Washington's Birthday	19	20	21	22	23
24	25	26	27	28	<i>“The poetry of earth is never dead.”</i> ~ John Keats	



MARCH

February 2019

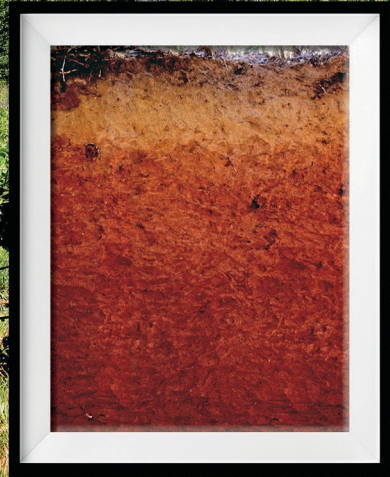
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24	25	26	27	28		

April 2019

S	M	T	W	T	F	S
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14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

▲ River flood-plain soils (Fluvents) have complex patterns resulting from meandering rivers and flood deposits. Fresh sediments bury existing soils and lead to the formation of new soils.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<i>“While the farmer holds the title to the land, actually it belongs to all the people because civilization itself rests upon the soil.”</i> ~ Thomas Jefferson					1	2
3	4	5	6	7	8	9
10 Daylight Savings Time Begins	11	12	13	14	15	16
17 St. Patrick's Day	18	19	20	21	22	23
24 31	25	26	27	28	29	30



APRIL

March 2019							May 2019						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
					1	2			1	2	3	4	
3	4	5	6	7	8	9	5	6	7	8	9	10	11
10	11	12	13	14	15	16	12	13	14	15	16	17	18
17	18	19	20	21	22	23	19	20	21	22	23	24	25
24	25	26	27	28	29	30	26	27	28	29	30	31	
31													

▲ Vineyards illustrate the value of soils for a wide range of economic uses. It has been long recognized that the characteristics of the soil are critical to the terroir, or environmental context, of great wines.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20 Passover
21 Easter	22 Earth Day	23	24	25	26	27
28	29	30	"It's not office buildings or jobs that give us our checks. It's the soil. The soil is what gives us the real income that supports us all." ~ Ed Begley, Jr.			



MAY

April 2019
S M T W T F S
1 2 3 4 5 6
7 8 9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30

June 2019
S M T W T F S
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9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30

▲ Sand dunes occur under windy conditions where sand is unprotected by vegetation. Many sand dune soils are composed of quartz (Quartzipsamments) because of quartz's durability and abundance.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<p><i>“Out of the long list of nature's gifts to man, none is perhaps so utterly essential to human life as soil.”</i></p> <p>~ Hugh Hammond Bennett</p>			1	2	3	4
5	6 Ramadan	7	8	9	10	11
12 Mother's Day	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27 Memorial Day	28	29	30	31	



JUNE

May 2019
S M T W T F S
5 6 7 8 9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30 31

July 2019
S M T W T F S
1 2 3 4 5 6
7 8 9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30 31

▲ Red soils owe their color to ferric iron, which results from the weathering and oxidation of iron-containing minerals. Where other factors are constant in a local region, the older the soil, the redder the soil, e.g., Rhodudalfs ("Rhod" from the Greek word "rhodon," meaning rose).

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<p><i>"Rarely have we stood back and celebrated our soils as something beautiful and perhaps even mysterious. For what other natural body ... has so many interesting secrets to reveal to the patient observer."</i></p> <p>~ Les Molloy</p>						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16 Father's Day	17	18	19	20	21	22
23 30	24	25	26	27	28	29



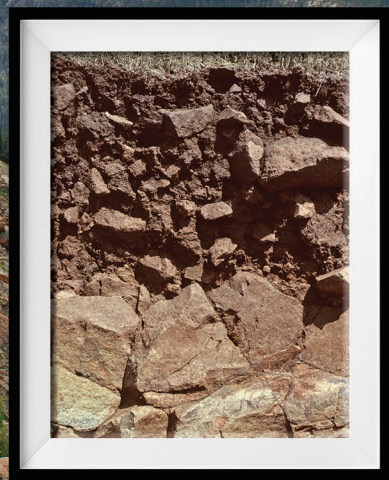
JULY

June 2019
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2 3 4 5 6 7 8
9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30

August 2019
S M T W T F S
1 2 3
4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30 31

▲ Gypsum sand dunes are most common in arid regions because of gypsum's solubility. Gypsum sand grains are also soft and tend to break along their cleavage planes. A variety of plants, including agricultural plants, can grow well in gypseous soils that are not saline.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3	4 Independence Day	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	<p><i>"Nature has endowed the earth with glorious wonders and vast resources ..."</i></p> <p>~ Charles Kellogg</p>		



AUGUST

July 2019

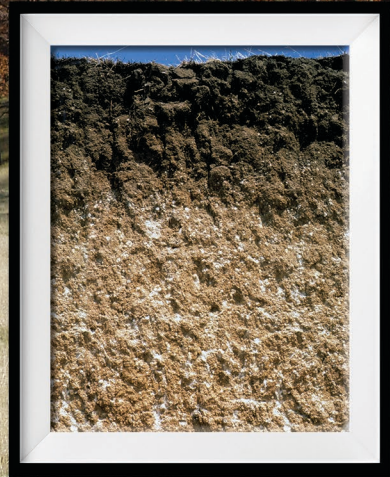
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14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

September 2019

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

▲ Shallow, rocky soils (e.g., Lithic Cryorthents) are common on steep, high-relief slopes of geologically young mountains. In these harsh environments, few plants exist that can hold soil material in place long enough for the formation of deep soils.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<i>“Land, then, is not merely soil; it is a fountain of energy flowing through a circuit of soils, plants, and animals.”</i> ~ Aldo Leopold				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31



SEPTEMBER

August 2019
S M T W T F S
4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30 31

October 2019
S M T W T F S
1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31

▲ Savannas are broad transitional areas separating forests and grasslands. This ecotone, or transition area between plant communities, has soils (Mollisols and Alfisols) with properties of both environments. It also has relict features from paleo-environments when its boundaries migrated back and forth.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2 Labor Day	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	<p><i>“Beautiful rocks - Beautiful grass - Beautiful soil where they both combine - Beautiful river - Covering sky - Never thought of possession, but all this was mine.”</i></p> <p>~ Bruce Cockburn</p>				

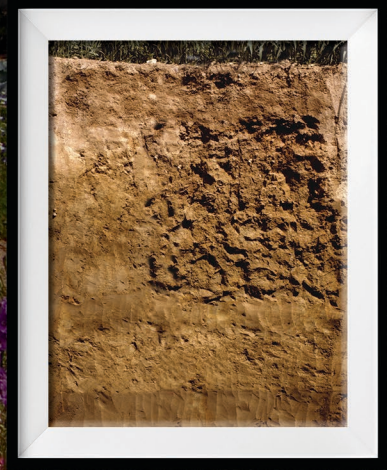


OCTOBER

September 2019							November 2019						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7						1	2
8	9	10	11	12	13	14	3	4	5	6	7	8	9
15	16	17	18	19	20	21	10	11	12	13	14	15	16
22	23	24	25	26	27	28	17	18	19	20	21	22	23
29	30						24	25	26	27	28	29	30

▲ Marshes are low-lying wetlands where anaerobic conditions curtail fungal decomposition of plant tissue. In these areas, organic soils (Histosols) form. If buried and under the right geologic conditions, the Histosols of today become the coals of tomorrow.

SUNDAY		MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<i>“Heaven is under our feet as well as over our heads.”</i> ~ Henry David Thoreau			1	2	3	4	5
6	7		8	9	10	11	12
13	14 Columbus Day		15	16	17	18	19
20	21		22	23	24	25	26
27	28		29	30	31 Halloween	<i>“Of all the paths you take in life, make sure a few of them are dirt.”</i> ~ John Muir	



NOVEMBER

October 2019

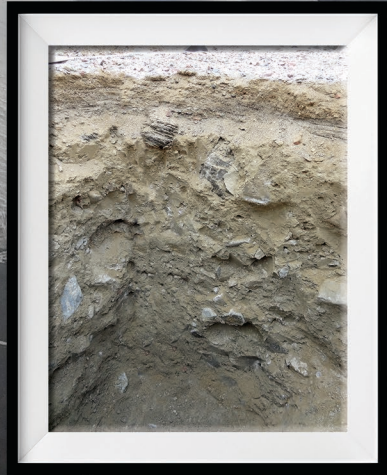
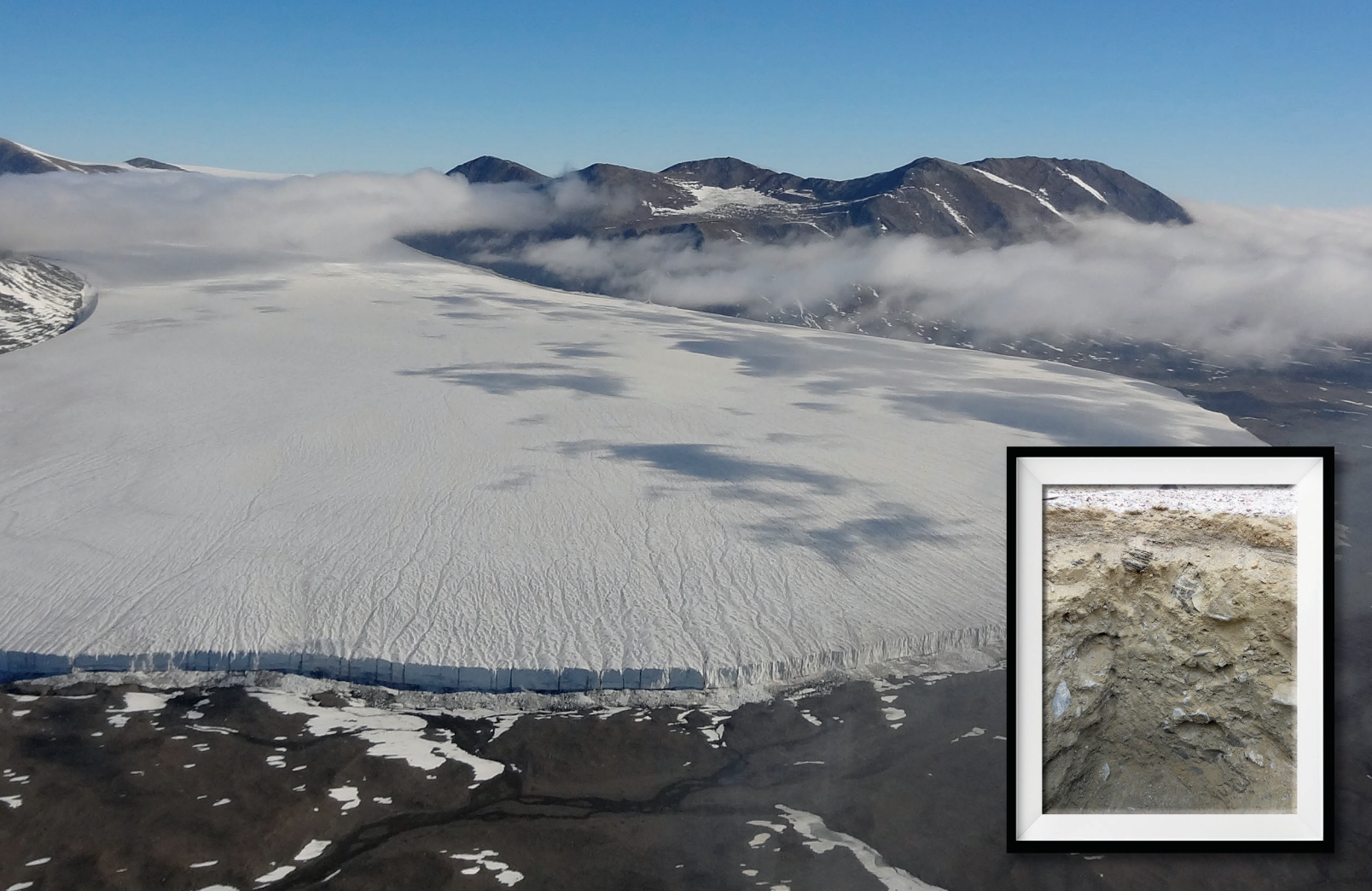
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6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

December 2019

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

▲ Loess is the wind-deposited, silty parent material in which some of the most productive (and erodible) soils on Earth have formed. Loess soils commonly contain paleosols that were buried by deposits of loess. These paleosols provide clues to natural cycles of climate change.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<i>“The soil is the great connector of lives, the source and destination of all. Without proper care for it we can have no community because without proper care for it we can have no life.”</i> ~ Wendell Berry					1	2
3 Daylight Savings Time Ends	4	5	6	7	8	9
10	11 Veterans Day	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28 Thanksgiving Day	29	30



DECEMBER

November 2019

S	M	T	W	T	F	S
				1	2	
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

January 2020

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

▲ Arctic and Antarctic soils occur in extremely cold climates that are, in many cases, also extremely dry. Despite these extreme conditions, some of these soils (Gelisols) have pedogenic horizons (e.g., calcic, gypsic, spodic, salic, and even argillic horizons).

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23 Hanukkah	24 Christmas Eve	25 Christmas Day	26 Kwanzaa	27	28
29	30	31 New Year's Eve	<p><i>“Essentially, all life depends upon the soil ... There can be no life without soil and no soil without life; they have evolved together.”</i></p> <p>~ Charles Kellogg</p>			



*"I am among those who think that
science has great beauty."
~ Marie Curie*

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**PRODUCTIVE LANDS
HEALTHY ENVIRONMENT**