



1  
00:00:08,450 --> 00:00:06,499  
water is the foundation of life on earth

2  
00:00:10,669 --> 00:00:08,460  
and without water life as we currently

3  
00:00:12,740 --> 00:00:10,679  
know it wouldn't exist the same goes for

4  
00:00:15,079 --> 00:00:12,750  
our astronauts in space whether living

5  
00:00:16,790 --> 00:00:15,089  
in spaceships or in planetary bases our

6  
00:00:19,220 --> 00:00:16,800  
space travelers remains fresh drinking

7  
00:00:20,810 --> 00:00:19,230  
water to sustain life as we design and

8  
00:00:23,000 --> 00:00:20,820  
build water purification systems for

9  
00:00:24,800 --> 00:00:23,010  
long-duration space missions we can use

10  
00:00:28,250 --> 00:00:24,810  
what Mother Earth has perfected to

11  
00:00:30,290 --> 00:00:28,260  
purify water working at NASA we're

12  
00:00:32,990 --> 00:00:30,300  
developing a way to use biomimetic

13  
00:00:35,510 --> 00:00:33,000

systems on earth to purify water in

14

00:00:37,880 --> 00:00:35,520

space our bio reactors break down

15

00:00:39,709 --> 00:00:37,890

wastewater using microorganisms like

16

00:00:42,139 --> 00:00:39,719

your septic tanks at home

17

00:00:44,090 --> 00:00:42,149

algae then remove high concentrations of

18

00:00:46,729 --> 00:00:44,100

nitrogen compounds while producing

19

00:00:49,069 --> 00:00:46,739

biomass and breathable oxygen the

20

00:00:51,560 --> 00:00:49,079

nutrient-rich water can then be used to

21

00:00:53,540 --> 00:00:51,570

grow plants the plants further clean the

22

00:00:56,240 --> 00:00:53,550

water by removing impurities while

23

00:00:58,189 --> 00:00:56,250

growing fresh food and in the end after

24

00:01:01,130 --> 00:00:58,199

all these stages you have clean potable

25

00:01:03,110 --> 00:01:01,140

water as we build technologies to purify

26

00:01:05,210 --> 00:01:03,120

water in space using lessons learned

27

00:01:06,980 --> 00:01:05,220

from mother nature we can also give back

28

00:01:08,960 --> 00:01:06,990

on this Earth Day by helping clean the

29

00:01:10,460 --> 00:01:08,970

water here at home in the near future

30

00:01:13,160 --> 00:01:10,470

here at the Merritt Island National

31

00:01:14,929 --> 00:01:13,170

Wildlife Refuge we hope to deploy these

32

00:01:17,660 --> 00:01:14,939

lessons learned to help bring the us

33

00:01:19,580 --> 00:01:17,670

right back to its natural beauty this is

34

00:01:23,399 --> 00:01:19,590

how NASA contributes technologies from

35

00:01:23,680 --> 00:01:23,409

space exploration back to earth