



**COMBAT CENTER
WATER CONSERVATION:**

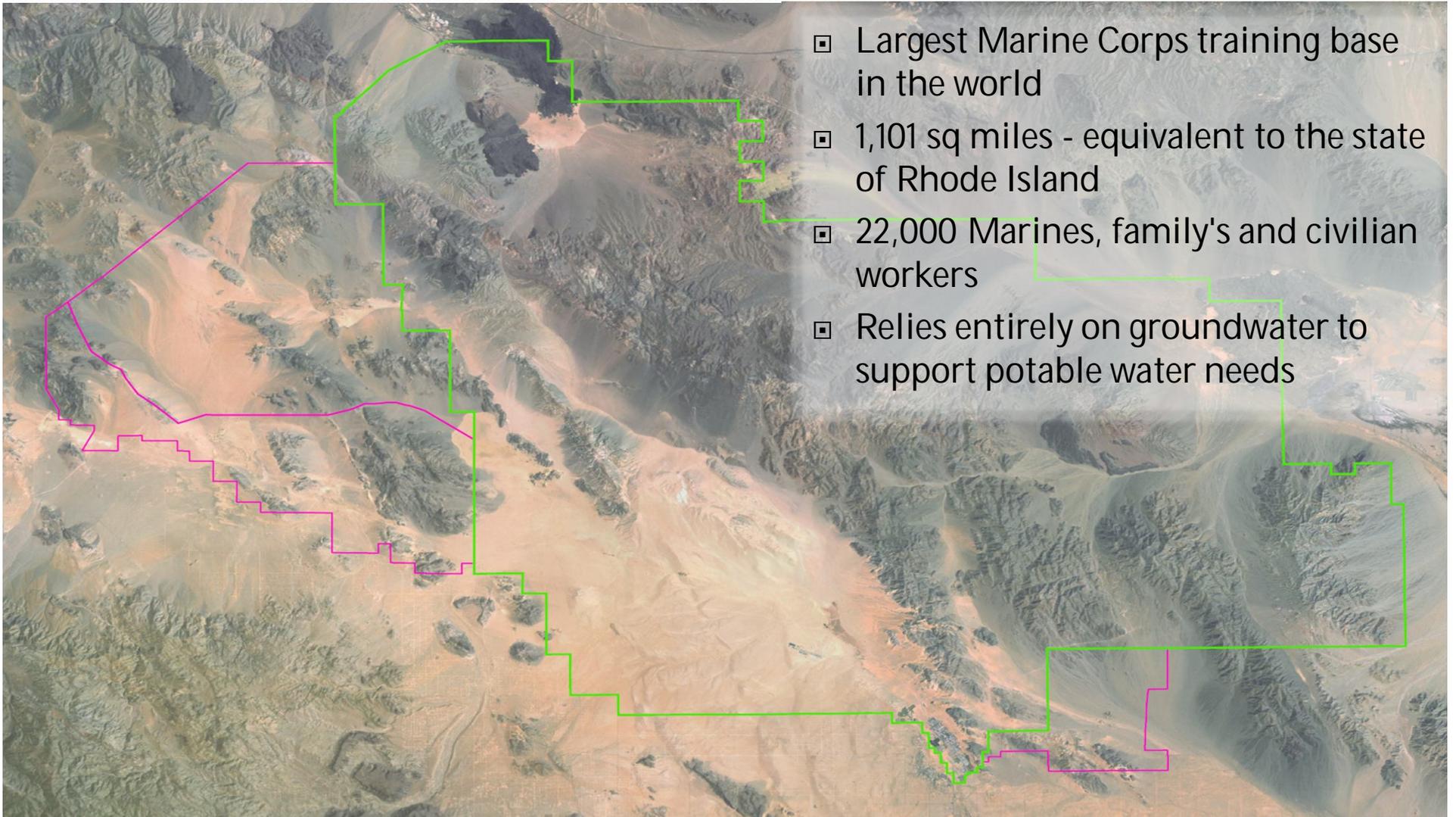
**KEEP CALM
AND
CONSERVE**

**Presented by:
Chris Elliott, Water Resources Manager
Natural Resources and Environmental Affairs**

Agenda

- ▣ Combat Center – History
- ▣ Water System
- ▣ Water Conservation Task Force (WCTF)
- ▣ Water Conservation
 - Public Outreach
 - Regulations
 - Enforcement
 - Water Savings
- ▣ Way Ahead
 - Projects
 - Green Space Reduction

COMBAT CENTER



- ▣ Largest Marine Corps training base in the world
- ▣ 1,101 sq miles - equivalent to the state of Rhode Island
- ▣ 22,000 Marines, family's and civilian workers
- ▣ Relies entirely on groundwater to support potable water needs

Water Conservation Task Force (WCTF)

- ▣ October 2014 the Commanding General issued a water conservation policy identifying water conservation requirements and establishing the Water Conservation Task Force (WCTF)
 - ▣ WCTF shall lead efforts to ensure the conservation and sustainability of our water resources
 - ▣ WCTF shall achieve these goals by evaluating current and projected water use, assessing infrastructure, operations and management practices, implementing relevant conservation technologies and methods, and educating all members aboard the Combat Center
 - ▣ Every effort shall be made to reduce potable water use for non-potable purposes.

WATER CONSERVATION POLICY

The Combat Center is the Marine Corps' premier training installation, providing an unmatched setting for Marines to conduct combined arms training and enhance their combat readiness. Over 11,000 Marines and Sailors are assigned to the installation and more than 8,000 family members call it home. To sustain training and daily operations in this harsh and austere desert environment, the Combat Center relies exclusively on an underground aquifer for all of our water requirements. Every day we utilize or consume over two million gallons of water while living in a State facing an unprecedented drought which has imposed mandatory water restrictions and stringent conservation strategies.



I am committed to the conservation and sustainability of our water resources. Water conservation, using water efficiently, and avoiding waste, is absolutely fundamental to ensuring water availability for the Combat Center's future. I charge all leaders aboard the installation to take an active role in this important program. Our Marines, Sailors, civilians and family members are ultimately responsible for its success.

My Water Conservation Task Force (WCTF) shall lead efforts to ensure the conservation and sustainability of our water resources. The WCTF shall achieve these goals by evaluating current and projected water use, assessing infrastructure, operations and management practices, implementing relevant conservation technologies and methods, and educating all members aboard the Combat Center. Every effort shall be made to reduce potable water use for non-potable purposes.

This is a community-wide effort. The following water-saving measures are easy steps that shall be adopted by everyone:

- Do not directly apply water to road ways, sidewalks, or parking lots for washing.
- Do not water outdoor landscapes that cause runoff to adjacent property, sidewalks, roadways, parking lots or structures.
- Use a hose that is fitted with a shut-off nozzle.
- Do not use potable water for fountains or decorative water features.

We need to work together as a team to prevent wasting water aboard this installation. Conservation is critical in order to protect our water resources and meet our future requirements.


LEWIS A. CRAPAROTTA
Major General, U.S. Marine Corps
Commanding General
Marine Air Ground Task Force Training Command
Marine Corps Air Ground Combat Center

Water Conservation Task Force (WCTF)

- ▣ The WCTF core members:
 - ▣ Natural Resources Environmental Affairs (NREA) Chair
 - ▣ Public Works Division (PWD) Co-Chair
 - ▣ Lincoln Military Housing (LMH)
 - ▣ Marine Corps Community Services (MCCS)
 - ▣ Family Housing (HSG)

- ▣ WCTF goal is to reduce water consumption to the maximum extent practical without impeding the Marine Corps mission

- ▣ Work to establish the Combat Center as the installation model for water conservation within the Department of Defense

- ▣ WCTF meets quarterly, tenant commands attending every other quarter



Public Outreach

- ▣ WCTF Branding
 - ▣ Logo
 - ▣ Brochures
 - ▣ Magnets
 - ▣ Door hangers
 - ▣ Web site

- ▣ Outreach to spread the CG policy
 - ▣ WCTF meetings with units
 - ▣ ECC meetings
 - ▣ Speedcall
 - ▣ OP news articles
 - ▣ Social media

- ▣ Water Conservation Hotline 830-SAVE (7283)
 - ▣ Established in March 2015
 - ▣ Report water waste
 - ▣ 13 calls; all issues resolved



The image shows a public outreach tip card. On the left, a semi-transparent box contains text: "DO" TIP, "Use a broom instead of a hose to clean driveways and sidewalks.", "For more tips visit www.green29.org", and "Water conservation is everyone's responsibility." On the right, there is a photograph of a modern building with a large white canopy. In the top right corner of the photo is a circular logo for the Water Conservation Task Force (WCTF) at MCAGCC. At the bottom of the card, a red banner contains the text: "To report water wasting, call our HOTLINE: 760-830-SAVE (7283)".

“DO” TIP
Use a broom instead of a hose to clean driveways and sidewalks.

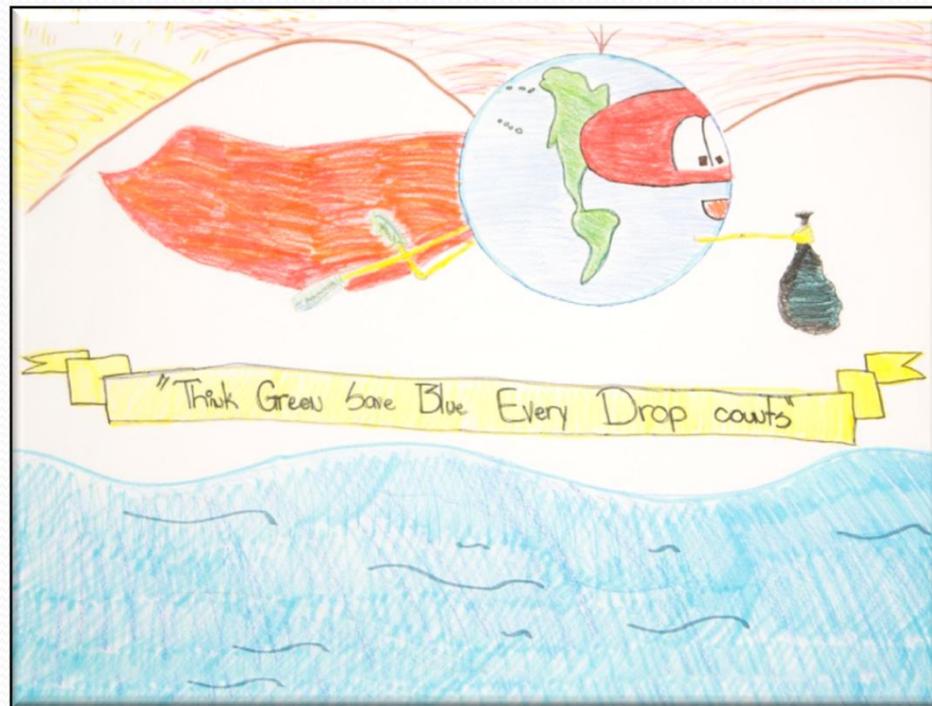
For more tips visit www.green29.org

Water conservation is everyone's responsibility.

To report water wasting, call our **HOTLINE: 760-830-SAVE (7283)**

Public Outreach

- ▣ Earth Day
 - ▣ Theme – “Think green save blue, every drop counts”
 - ▣ Kids poster contest
 - ▣ Booth to interact and spread the conservation message



Drought Response Policy

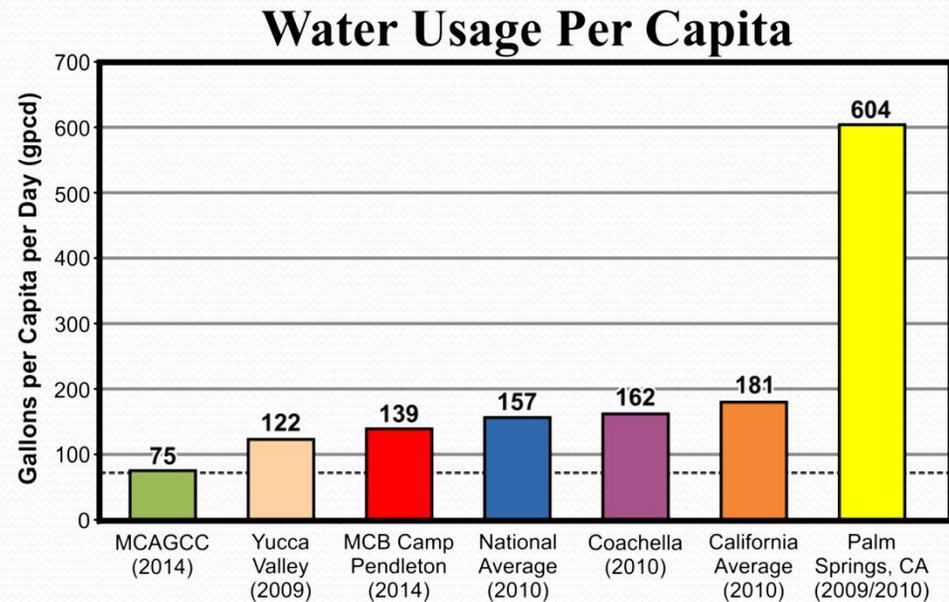
- ▣ Will not negatively impact mission
- ▣ Irrigation
 - ▣ Times limited between 1800 and 0900 (6 pm and 9 am)
 - ▣ Duration limited to 15 minutes
 - ▣ Frequency NTE 2 times per day
 - ▣ Wait 2 days after ½ inch rainfall before resuming irrigation
- ▣ Leaks shall be secured immediately and/or repaired in 48 hours
- ▣ Discourages washing of private vehicles in housing areas
- ▣ Utilization of non-potable water to support construction and dust abatement activities
- ▣ Provides formalized process for requesting washing of paved surfaces due to sanitation or safety
- ▣ Prohibits the use of decorative water features/fountains

Drought Response Policy

- ▣ Develop and implement plans to cease all “non-mission related” potable water landscape irrigation, to include housing areas, that do not utilize desert landscaping
- ▣ Allowing grass areas to die in anticipation of replacement with drought tolerant native species and/or xeriscape
- ▣ Clearly outlines fixture (faucets, urinals, and toilets) flow rate requirements
 - ▣ Bathroom faucets will not have a flowrate exceeding 1.0 gpm
 - ▣ Kitchen faucets will not exceed 1.5 gpm.
 - ▣ Urinals will not utilize more than .5 gpf.
 - ▣ Toilets will not utilize more than 1.28 gpf.
 - ▣ Shower heads will not have a flowrate exceeding 2.0 gpm.
- ▣ Provides enforcement process for the Drought Response Policy

Water Savings

Potable Water Supplied (gallons/month)		
Month	FY 2014	FY 2015
October	63,089,010	56,519,190
November	42,572,262	34,546,488
December	31,134,216	25,283,616
January	32,226,810	33,505,872
February	34,409,227	33,262,680
March	51,344,622	39,596,040
April	56,783,088	42,035,658
May	67,380,546	51,453,960
June	75,578,892	
July	76,944,648	
August	74,377,110	
September	65,271,894	
TOTALS	671,112,325	316,203,504



FY13 to FY14 total water reduced by
54,189,645 gallons

62,736,277 gallons saved (Oct14- May15)

Water Savings

- ▣ WCTF established in October 2014
- ▣ WCTF efforts resulted in 62,736,277 gallon savings compared to the same period (Oct-May) in the previous year
 - ▣ Equal to almost two months of Combat Center water consumption
- ▣ Combat Center per-capita water use is 75 gallons, lower than any city in our area (Colorado River Region)
- ▣ Governor Brown called for a 25% reduction in water use based on 2013
 - ▣ Combat Center water use for the month of April was reduced by 41.8% and 36.0% for the month of May compared to 2013
- ▣ Replace aerators in housing, 822 replaced from May to present



Way Ahead

- ▣ Continued public outreach (Brochures, OP articles and PSA)
- ▣ Identify green space reduction opportunities
- ▣ Optimizing WWTP for maximum water reuse
- ▣ Capture and Reuse of Storm Water
- ▣ Replace open pond storage with tanks to reduce evaporation loss
- ▣ Develop base wide Water Conservation Plan
- ▣ Develop additional and improved matrix for tracking conservation efforts
- ▣ Seeking Board endorsement of water conservation projects

MCAGCC's Water Future

Water conservation will continue to challenge the Combat Center, well into the future. Through planning and resource management, the Combat Center is poised to be a leader in resource conservation and sustainability, allowing training support operations to continue.

