**Meeting Minutes** **of the Subcommittee on Disaster Reduction**

7 June 2018, 10:00 a.m. to 12:00 p.m., White House Conference Center Lincoln Room

Italics indicate absent members. “T” indicate members participating via teleconference.

**Co-chairs**

David Applegate (USGS)   
Mary Erickson (NOAA)

Jack Meszaros (OSTP)

**Designated Representatives**

# ASPR *Darrin Donato*

# BLM *Georgette Fogle*

# CDC *Mollie Mahany*

# DHS *Erin Walsh*

# DHS/FEMA *Roy Wright*

# DHS/USCG Jim Small (T)

**DOD** *Al Johnson*

**DOE** *Patricia Hoffman*

**DOT** Sheila Duwadi

**EOP/OMB** *Michael Clark*

**EOP/OSTP** *Jack Meszaros*

**EPA** *Greg Sayles*

**FERC** *Marsha Palazzi*

# HUD Dana Bres

# NASA *Craig Dobson*

**NGA** *Kerri Dugan*

# NGB Steve Mason

# NIH *Aubrey Miller*

**NIST** Steve Cauffman (T)

**NOAA** Mary Erickson

**NPS** Marcy Rockman

# NSF *Greg Anderson*

**State** *Fernando Echavarria*

**USACE** Tony Niles

*Dimitra Syriopoulou*

**USAID** Sezin Tokar

**USCB** *Laura Furgione*

**USDA** *TBD*

**USFS** *Monica Lear*

*Carlos Rodriguez-Franco*

**USGS** David Applegate

**USNRC** *Edwin Hackett*

**USPHS** *Estella Jones*

**Other Attendees  
DHS/FEMA** Emily Blanton (T)

**DOI** Jeremy West

**EOP/OSTP** Mike Dunlevy

**EPA** Keely Maxwell

**NASA** David Green (T)

**NOAA** Gerry Bell (T)

**NGA** Kevin Dobbs

**NGB** Patrick Macklin

**NIH** April Bennett

**NPS** Ann Hitchcock  **NSC** John Ferris

**USCG** Bennett Jerrow (T)

**USGS** Ivan DeLoatch  
Camille Hopkins  
Charles Mandeville

Alice Pennaz

**USFS** Mike Cherry

LuAnn Grover

**USACE** Kathryn McIntosh

**USNRC** John Nakoski (T)

**SDR Secretariat**

Aleeza Wilkins

**Handouts**

* June Meeting Agenda
* Draft May Meeting Minutes

**Agenda**

10:00 Welcome, Introductions, and Approval of Minutes

10:05 Co-chairs Report

10:15 Readout: EOP Hurricane Information Flows Workshop

10:25 Briefing: 2018 Hurricane Season Outlook

11:00 Briefing: 2018 Wildfire Season Outlook

11:20 Kilauea Eruption Activity

11:55 Close and Next Actions

1. **Welcome and Introductions**

National Science and Technology Council (NSTC) Subcommittee on Disaster Reduction (SDR) Co-chair David Applegate (USGS) called the December meeting to order at 10:02 a.m. in the White House Conference Center Lincoln Room, and participants introduced themselves.

1. **Report from the Co-chairs and Approval of Minutes**

The draft of the minutes for the May monthly meeting was approved with no changes.

SDR Co-chair Dave Applegate (USGS) reported that the 43rd Annual Natural Hazards Research and Applications Workshop would be held in Broomfield, Colorado from July 8-11, 2018. More information is available at: <https://hazards.colorado.edu/workshop/2018>.

Applegate also noted that the next International Working Group meeting would take place on Friday, June 15, at 3:00 p.m. at FEMA headquarters. The meeting will serve as a delegation meeting for those attending the Regional Platform for Disaster Risk Reduction in the Americas on June 20-22 in Cartagena, Colombia.

SDR Co-Chair Mary Erickson (NOAA) requested that members help to promote safety this summer in three areas: lightning storms, cold water drownings, and children in the back seats of cars (“Beat the heat, check the back seat”).

Ivan DeLoatch (Federal Geographic Data Committee) extended an invitation to SDR members to participate in the upcoming Disasters Concept Development Study Workshop on July 24-25, 2018, at the NOAA Auditorium in Silver Spring, MD. The workshop will shape future activities regarding disaster preparedness and response, and inform Disaster Spatial Data Infrastructures in terms of data use and interoperability. The workshop is being organized by the Open Geospatial Consortium and sponsored by DHS, the FGDC, the USGS, and other agencies. Participation is open to all, but registration is required. More information at <http://www.opengeospatial.org/pressroom/pressreleases/2811> and registration at: <http://www.opengeospatial.org/ogcevent/180724noaacds>

1. **Readout from the Hurricane Information Flows Workshop**

Mike Dunlevy (OSTP) reported on the May 30 workshop on Whole-Community Hurricane Information Flows jointly organized by the National Security Council staff and OSTP. It was designed to increase information sharing and support decision making for the upcoming hurricane season. Over 100 individuals representing 10 companies, 15 non-governmental organizations, and a wide variety of state, local, and federal partners attended. Four themes emerged:

1. The need for improved data consolidation, standardization, interoperability, and sharing;

2. The desire for local responders to receive technical support and case studies to improve data-driven decision-making.

3. The importance of developing tools and data that cater to the need of the end user; and

4. Use of crowdsourcing and social media during disaster response.

1. **Presentation on the 2018 Hurricane Season Outlook**

Gerry Bell, the lead seasonal forecaster of NOAA’s Climate Prediction Center, delivered an overview of the 2018 hurricane season outlook issued on May 24, 2018. The seasonal outlooks cover three regions: the Atlantic Basin, the Eastern North Pacific, and the Central Pacific. Atlantic storms track to the west, either into the Caribbean Sea and Gulf of Mexico, or curve northwest along the U.S. East Coast and over the open ocean. The Eastern Pacific is an active region, though storms track westward and rarely make landfall north of the Baja Peninsula. The Central Pacific experiences relatively few storms, but those that do form may impact Hawaii.

The hurricane season outlook does not serve as a prediction for the number of storms or levels of activity for a specific location, as that information is highly dependent on weather patterns present at the time of the storm’s formation. However, NOAA predicts a near- or above-normal season for each region. The Atlantic Basin is predicted to experience 10-16 named storms, 5-9 hurricanes, and 1-4 major hurricanes. The Eastern Pacific is predicted to experience 14-20 named storms, 7-12 hurricanes, and 3-7 major hurricanes. The Central Pacific is predicted to experience 3-6 tropical cyclones. NOAA does not expect the 2018 Atlantic hurricane season to be as active as last year’s, which produced 17 named storms, 10 hurricanes, and 6 major hurricanes.

Global climate patterns strongly influence hurricane conditions for months to decades at a time. By predicting climate patterns, NOAA is able to predict conditions influencing hurricane formation and the strength of the upcoming season. Many prediction tools are used, including extensive monitoring and analysis of the historical record, global ocean and atmosphere data, over 30 years of research into hurricanes and global climate patterns, and a suite of statistical and climate model prediction tools, some of which were only developed in the last 10 years.

Bell explained that the amount of wind shear (the change in wind speed and direction compared to altitude) is a driving force behind how strong or weak a storm is. Weak wind shear allows storms to strengthen, while strong wind shear effectively rips apart hurricanes from top to bottom. Climate patterns such as El Nino and La Nina, and the Atlantic Multi-Decadal Oscillation (AMO) influence wind shear and ocean temperatures on a yearly and decadal cycle. The Atlantic has been experiencing a high-activity AMO since 1995, and historically, the U.S. sees double the number of landfalling hurricanes during high-activity eras compared to low-activity eras. Bell showed how Florida’s population has grown exponentially during the current high-activity era, and

In sum, NOAA expects near-normal or above-normal hurricane seasons this year in all three hurricane regions (Atlantic, eastern Pacific, and central Pacific). Hurricanes are not just a coastal event, but can impact millions of people in many ways. Residents are encouraged to prepare for every hurricane season regardless of the outlook. The high-activity era for Atlantic hurricanes began in 1995, following decades of exponential growth in coastal regions, resulting in more hurricanes and more people in harm’s way. That growth has continued during the current high-activity era, and over 80 million people could potentially be impacted by an Atlantic or Gulf Coast tropical storm or hurricane. As such, emergency planning and execution presents more challenges and demands much longer forecast lead times.

The Atlantic Outlook Summary is available at: [http://www.cpc.ncep.noaa.gov/products/outlooks/hurricane.shtml](http://www.cpc.ncep.noaa.gov/products/outlooks/hurricane.shtml" \t "_blank). The related press release is available at: [http://www.noaa.gov/media-release/forecasters-predict-near-or-above-normal-2018-atlantic-hurricane-season](http://www.noaa.gov/media-release/forecasters-predict-near-or-above-normal-2018-atlantic-hurricane-season" \t "_blank).

1. **Presentation on the 2018 Fire Year Outlook**

Mike Cherry, Emergency Management Specialist with the U.S. Forest Service, and Jeremy West, Emergency Management Coordinator with the DOI Office of Wildland Fire, provided an update and outlook for the 2018 fire year. For context, the record 2017 fire year consisted of fires in Southeastern Appalachia, the Great Plains, western states, and significant activity in California. These fires resulted in 28,000 firefighters deployed, 12,300 structures lost, $2.9 million spent for suppression alone, and 10 million acres of land burned (the size of Maryland).

Prediction of the 2018 fire year incorporates multiple variables, including temperature departure from normal, precipitation, and seasonal drought outlook. Month-by-month outlooks for June through September include higher potential in the northwestern portion of the country, and below normal risk in Alaska and Florida.

So far in 2018, more than 1.3 million acres have been burned. There are 15,000 combined federal and wildland firefighters and over 1,500 engines available for deployment. Regardless of state, local, or tribal boundaries, Cherry and West emphasized that collaboration maximizes efforts. Although weather and topography cannot be controlled, other factors may be influenced, such as incorporating fuels management practices into natural resources planning.

In terms of technology use, Cherry and West explained that unmanned aerial systems are coming into their own as a cost-effective and safe tool to conduct reconnaissance and gather real-time data, and that new technologies are continuously being evaluated for use in communications, command systems, and monitoring activities.

The presentation ended with the perspective that fire is an integral part of healthy landscapes, and as stewards of the land it is our responsibility that fires occur at the appropriate intensity and frequency so as to avoid catastrophic fires.

**VI. Presentation on Response to 2018 Kilauea Eruption**Charlie Mandeville, USGS Volcano Hazards Program Coordinator, presented an update on the response to the ongoing eruption of Kilauea Volcano. At the time of the meeting, the eruption had been active for 34 days, having begun on May 3, 2018, and showed no signs of slowing down.

Kilauea is fueled by hot-spot volcanism that causes basaltic lava to build seamounts, which grow into islands above sea level. The Hawaiian hot spot has been active for 81 million years, and Kilauea is the youngest expression of the hot spot on the Big Island. A new volcano, Loihi, is growing 35 miles off-shore, and is currently 975 meters below sea level. The Big Island consists of five volcanoes: Mauna Loa is the biggest volcano on Earth, and Kilauea is in the southeast corner of the island. Kilauea’s summit magma chamber feeds the Halema'uma'u crater lava lake, and for the last 35 years, activity has been centered at the Pu’u O’o vent in the Middle East Rift Zone.

On April 26th, drastic changes were observed by the USGS Hawaiian Volcano Observatory (HVO), including an overflow of the summit lava lake, a draining of the lava lake at Pu’u ‘O’o Crater, and increased seismicity in the Lower East Rift Zone (LERZ). On May 3, the first fissure opened in the LERZ, in the Leilani Estates subdivision. On May 4th, a magnitude-6.9 earthquake occurred--the largest felt in the area in 40 years.

A total of 24 fissures opened in the LERZ. At first, lava spatter did not travel very far, but in the past two weeks hotter, more fluid magma has been erupting, which can travel several miles. As of June 7th, fissure activity was centered at Fissure 8 and the resulting channelized lava flow was traveling over 5 miles to the sea, where it had covered several additional subdivisions with hundreds of houses and filled in Kapoho Bay.

At the summit, the lava lake at Halema'uma'u Crater has dropped dramatically: over 500 meters in the first two weeks, and by June 7, was likely about 1 kilometer below the surface. Energetic explosions at the summit have resulted in ash plumes reaching 10,000 to 12,000 feet. On May 17, a plume reached 30,000 feet, resulting in flight restrictions. InSAR data from international space agencies revealed an increase in the summit crater dimensions (from 12 acres to 90 acres) due to crater wall collapse. The crater floor has subsided 15-25 feet. At the time of the meeting, the HVO building at the edge of the crater was still serving as a communications hub for monitoring equipment, but all staff had relocated to the University of Hawaii-Hilo campus.

The main hazards include:

● Volcanic gases -- SO2 and CO2 at high temperatures and lethal concentrations;

● Ground collapse during fissure formation;

● Lava flows, including channelized flows and natural levee failure;

● Laze plumes at lava-seawater interface (a hot plume containing hydrochloric acid and glass particles);

● Ashfall from summit explosions;

● Earthquake aftershocks from the M6.9 earthquake on May 3;

● A potential cascading event at the partially overrun Puna Geothermal Venture plant, which normally provides 30% of the Big Island’s power.

The HVO response has included mission assignments through FEMA Region IX to provide subject matter experts embedded within state and county emergency operations centers. Several dozen scientists from other USGS volcano observatories and other parts of USGS are assisting HVO, which has also benefited from contributions from DOI, NWS, NGB, NASA, and USACE for Doppler radar, imagery, unmanned aerial systems (UAS), and other critical capabilities. For more information about the current status of Kilauea Volcano, visit [https://volcanoes.usgs.gov/volcanoes/kilauea/status.html](https://volcanoes.usgs.gov/volcanoes/kilauea/status.html" \t "_blank). 

1. **Adjournment**

Applegate adjourned the SDR June meeting at 12:03 p.m. and noted that the Subcommittee’s next meeting will be held on Thursday, July 12, in the White House Conference Center Lincoln Room.

1. **SDR 2018 Meeting Calendar**

SDR meetings in 2018 will be held from 10:00 a.m. to 12:00 p.m. on the dates listed below in the Lincoln Room of the White House Conference Center unless otherwise noted:

**2018**

* Thursday, January 4
* Thursday, February 1
* Thursday, March 1
* Thursday, April 5
* Thursday, May 3
* Thursday, June 7
* Thursday, July 5\*
* Thursday, August 2\*\*
* Thursday, September 6
* Thursday, October 4
* Thursday, November 1
* Thursday, December 6

\* July meeting subject to change to avoid proximity to the Independence Day Federal holiday.

\*\* August meeting subject to cancellation.

1. **Agenda Items and Other Communications with the Subcommittee**

Please send proposed agenda items and any other items intended for distribution to the full Subcommittee to the SDR Secretariat ([SDR@usgs.gov](mailto:SDR@usgs.gov)).

1. **Contact Information**

**SDR Leadership**

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| --- | --- | --- | --- |
| David Applegate | Co-chair | 703-648-6600 | applegate@usgs.gov |
| Mary Erickson | Co-chair | 240-678-2849 | Mary.erickson@noaa.gov |
| Jack Meszaros | Co-chair | 202-456-6020 | Jacqueline\_R\_Meszaros@ostp.eop.gov |

**Executive Secretariat**

SDR@usgs.gov

1. **Summary of June Actions**

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| --- | --- | --- |
| **Action** | **Lead** | **By When** |
| The next SDR meeting will be held on Thursday, July 12, in the White House Conference Center Lincoln Room. | SDR Members | For Information |
| Register for the 3rd Annual Natural Hazards Research and Applications Workshop in Broomfield, Colorado from July 8-11, 2018 at [https://hazards.colorado.edu/workshop/2018](https://hazards.colorado.edu/workshop/2018" \t "_blank). | SDR Members | June 2018 |
| Register for the Disasters CDS Workshop in Silver Spring, MD on July 24-25, 2018 at [http://www.opengeospatial.org/ogcevent/180724noaacds](http://www.opengeospatial.org/ogcevent/180724noaacds" \t "_blank). | SDR Members | July 2018 |
| Send additional disaster-related priorities from your agency for consideration in the new Administration to the SDR Secretariat (SDR@usgs.gov) on a rolling basis. | SDR Members | Standing |
| Send Dave Applegate an email (applegate@usgs.gov) if you are interested in contributing to the work of the SDR and would like additional documentation or an agency-specific letter. | SDR Members | Standing |
| Email the SDR Secretariat (SDR@usgs.gov) to suggest external DRR stakeholder groups to invite to present at quarterly SDR meetings on behalf of the U.S. National Platform for UNISDR. | SDR Members | Standing |