Vulnerability and Adaptation to Climate Extremes in the Americas (VACEA)
Swift Current Creek Basin 2013 Knowledge Outreach Events
January 23rd – LB Thomson Room, SPARC Research Station 10am – 4pm

Learning from Past Climate Extremes
Strengthening Agricultural Resilience to Climate Extremes

Workshop Agenda for Swift Current Creek Watershed

The workshop will consist of two parts: 1) Setting the Context; and 2) Interactive Workshop (see details below)

PART ONE: SETTING THE CONTEXT – STRENGTHENING LOCAL KNOWLEDGE (90 min)

1. **Introductions (5 min):**
    - **Swift Current Creek Watershed Stewards** – Arlene Unvoas
    - **University of Regina -** Vulnerability and Adaptation to Climate Extremes in the Americas Team: Dave Sauchyn *et al*
    - **Agriculture and Agri-Food Canada:** VACEA collaborators / Ag Adaptation: Darrell Corkal

2. **Brief VACEA Research Overview** - Dave Sauchyn (10 min)

3. **Insights of Local Stakeholders – Community Vulnerability Assessments (preliminary findings of VACEA student summer research 2012):**
    - **Presented Jessica Vanstone, Amber Fletcher, Bruno Hernani and Erin Knuttila (University of Regina)** (30 min)
    - Focus on Shaunavon and Rush Lake study areas

4. **The Watershed's 100 Year Historic Instrumental Record**
    - **Presented by Darrell Corkal (AAFC)** (15 minutes)
    - Agronomic indicators (Precipitation, Growing Degree Days, Frost, Temperature)
    - Graphics for workshop will cover extreme dry (drought); extreme wet (excess moisture)

5. **The Watershed's Paleo Record of Natural Variability**
    - **Presented by Dave Sauchyn (University of Regina)** (15 minutes)
    - 250 year record (tree ring data) and correlation to agro-climate indicators
    - The concept and exposure of a 60 year wet/dry cycle
    - Does historic data have any correlation with future scenarios?

6. **Questions and Dialogue** (15 min) Large Group Discussion

PART TWO: INTERACTIVE WORKSHOP –
USING LOCAL KNOWLEDGE TO GUIDE LOCAL ADAPTATIONS

This part of the workshop will be 1.5 to 2 hours; VACEA and AAFC staff will facilitate dialogue with small groups, followed by a large group discussion.

Strengthening Agricultural and On-Farm Resilience to Climate Extremes

This interactive workshop will begin with small group discussions, followed by a large group plenary discussion.

The goals will be to:

- Discuss and share attendees' personal experiences of exposure and adaptive responses to extreme events (i.e. within the last 25 years).
- Compare these experiences to the longer 100 yr instrumental record and 250 yr ecological record (based on new knowledge of past history, as understood from the initial session).
- Identify successes, gaps, needs, options for strengthening local agricultural and adaptive capacity both on-farm and regionally (within the watershed).
- Consider steps to improve planning for future weather extremes at the local level. What do people need to be resilient? What successful strategies could be used more widely? What are some short- and long-term planning ideas? (next 5 years, next 10 years?)

The interactive discussion will use graphs and maps showing details of past extreme events (e.g., flood and drought) that dramatically affected the Oldman basin.

The "Extremes" graphics for the workshop will include:

- **Extreme dry years (drought) and wet years (flood) using preliminary CVA data**

- **Seasonal Precipitation Anomalies** Extreme dry (drought): 1988, 2001; Extreme wet (excess moisture): 1986, 2010

- **Runoff Simulation Map:** 100 mm inundation; 300 mm inundation

- **250 year Tree Ring Anomalies (Ecological) Map:**
    - Cumulative Distribution of Tree Rings over 800 years
    - Departures from normal 1971-2000 baseline

Interactive Workshop Questions

The small group targeted questions include:

Based on your personal experience with extreme events, and in the context of the broader and longer-term historic exposure to climate extremes, what are the recommendations you would suggest to someone farming your land 50 years from now:

1. What adaptations worked for you?

2. What adaptations did not work for you?

3. What could have been done to adapt differently or to be more effective in increasing your resilience?
    a. On your farm?
    b. In your local agricultural watershed?

4. Considering the historic scale, both magnitude and frequency of the extreme events, it is evident that some events (drought, excess moisture/flooding) occur in multiple years and sometimes last 3-7 years in duration. What is your recommendation to a future farmer to be more equipped for multi-year extreme events:
        i. Drought
        ii. Excess moisture

5. What resources are needed for you to be more resilient to extreme events:
        i. Economic resources?
        ii. Social resources?
        iii. Institutional resources?