

Future and Related Work

Plans, Goals, Wishes, ...

General Resilience Indicators

(Waldick, Bizikova, Larkin)

- Parallel consultative project not covered today, but discussed in previous webinar
- Identified existing, possible, desired indicators to characterize resilience
- SOME of those indicators already in our Envision project, others identified as relatively easy to add, or we have documented how to calculate
- Briefing note (IISD), paper following

Short term plans (i.e. in progress)

- Explore 10 km gridded weather data and predictions
 - Visualization
 - Indicator calculation at finer spatial scales
- Analyze crop phenology indicators using historic production data
- Explore hydrological modelling (C. Samson, MSc. In Progress)

Medium (or longer) term options

- Refine crop indicators using soil moisture and evapotranspiration
- More crops (rotations, indicators)
- Add crop varietal adaptations
- Improve farm operations:
 - treatment of wet soil
 - seeding (include cultivation)
 - rotation
 - impacts of distance on planting choice
- Keep exploring weather data options (e.g. more variables, improve confidence in spatial variability, better GCM scenarios)
- Improve yield forecasts
- Livestock impacts: grazing, hay production, heat stress...
- Calculate soil erosion
- Expanded farm types
- Farmer types

Expansion possibilities

- Other regions (note “sister” project in PEI); Peel Region (Ontario Climate Consortium) ?
- Further collaboration with Risk Sciences International (indicators shared)
- Interactivity: “model farms” ?
- Communication - Cybercartographic atlas
- Greenhouse gas calculator
- More advanced treatment of LSRS (land suitability rating system)
- Other processes, other actors, e.g. market forces (commodity prices?), how other systems *interact* with the climate-crop processes we’ve focussed on today
- ... ?

How things change...

- Configuration (some in interface, but see also configuration files)...
 - Example files
- Database development (presentations today, notes, tools, all shared)
- Coding - open source (but somebody needs to do it)
- Collaboration

```
EasternOntario.envx  X
1  <?xml version='1.0' encoding='utf-8' ?>
2
3  <Envision ver='6.0'>
4
5  <!--
6  =====
7  S E T T I N G S
8  =====
9  actorInitMethod: Specifies how actors are initialized
10     0 = no actors
11     1 = based on weights specified in the IDU coverage
12     2 = based on groups defined in the ACTOR field in the IDU coverage
13     3 = based on a spatial querys defined for the actor groups
14     4 = use a single, uniform actor
15     5 = generate random actors (not fully supported at this time
16
17  actorAssociations:    0=disable, 1=enable
18  loadSharedPolicies:  0=disable, 1=enable shared policies
19  debug:                0=use debug mode, 1=no debug mode
20  startYear:            0= ignore, otherwise specific start year (e.g. 2012)
21  logMsgLevel:         0=output everything, 1=log errors, 2=log warnings, 4=log infos, add together as necessary
22  noBuffering:         0=disable polygon subdivision during Buffer(), 1=enable subdivision
23  multiRunDecadalMapsModulus: output frequency (years) for maps during multiruns
24  defaultPeriod:      default simulation period (years)
```

```

EasternOntario.xml  EasternOntario.envx
226  =====
227  -->
228  <farm_model farmID_col="FARMID" lulc_col='LULC_B' rotation_col='ROTATION' farmType_col='FARMTYPE'
229          region_col='REGION_ID' init='1' yrf_threshold='0.5' output_pivot_table='1' track='*'>
230
231  <rotations>
232      <rotation name="Corn/Soybean/Cereal" id="100" sequence="147,158,134"
233      <rotation name="Corn/Soybean/Cereal/Alfalfa/Alfalfa/Alfalfa/Alfalfa" id="101" sequence="147,158,134,12
234      <rotation name="Corn/Soybean/Corn/Soybean/Cereal" id="102" sequence="147,158,147,15
235      <rotation name="Corn/Soybean/Corn/Soybean/Alfalfa/Alfalfa/Alfalfa/Alfalfa" id="103" sequence="147,158,147,15
236  </rotations>
237
238  <!-- note: the following are from FarmTypesLUT.xlsx -->
239  <!-- 'id' is the internal code used for this type (stored in [FARMTYPE] field). See FarmModel.h for values -->
240  <!-- 'code' is a 1-3 character field used to autopopulate the [FarmType] column from the [FT_Extents] field -->
241  <!-- region: 1=ottawa, 2=PR, 3=SDG -->
242  <!-- expand_types: farm types that this farm typs can expand into -->
243  <farm_types>
244      <farm_type id='0' code='' name='Unknown' rotations='' />
245      <farm_type id='1' code='CCF' name='Cow calf and fld crop' rotations='101,103' />
246      <farm_type id='2' code='CC0' name='Cow Calf Only' rotations='' expand_regions='3' ex
247      <farm_type id='3' code='DY0' name='Dairy Only' rotations='' />
248      <farm_type id='4' code='DFC' name='Dairy and Fld crop' rotations='101,103' expand_regions='1,2,3' ex
249      <farm_type id='5' code='DYH' name='Dairy and hay' rotations='' expand_regions='1,2' />

```


Envision /

Revision: HEAD

Docs		r57	boltej
GDAL		r15	boltej
ModFlow		r16	boltej
res		r17	boltej
src		r697	vachek
Tutorials		r376	boltej
7z.dll	1 389 KB	r20	boltej
7z.exe	278 KB	r21	boltej
7-zip.chm	89 KB	r22	boltej
CppLineCounter.exe	236 KB	r23	boltej
Tips.txt	2 KB	r24	boltej
update_ftp.scr	1 KB	r25	boltej
zip.exe	132 KB	r19	boltej