

SUMMARY REPORT GRAIN PROJECT 2010

LOPEZ COMMUNITY LAND TRUST

Compiled by Rhea Miller with primary input from OJ Lougheed

September 27, 2010

June of 2009 LCLT hired OJ Lougheed as a grain specialist to take the lead on the Grain Project. The Grain Project is exploring the renewed production of grain from open-pollinated, non-GMO, and PVP-free, modern and “heritage” varieties for the purpose of food security in the islands. There are four areas that the LCLT has been exploring regarding grain:

- 1) creating a permanent seed bank or library**
- 2) researching island appropriate seed**
- 3) inventory and acquisition of island appropriate equipment**
- 4) fostering farmer and consumer awareness**

2010 has been a great learning year for those involved with the Grain Project. In the fall of 2009, OJ and Peter Currie purchased various varieties of grain. In addition, OJ had a personal cache of varieties, some of which he shared for planting. Both winter wheat and spring wheat plantings on small plots occurred on over 13 sites. Grain growers have included: Ona Blue, Todd Goldsmith, David Zapalac, the School, Michele and Steve Heller, Charles Mische, Christine Langley, Steven Brouwer, Susan Bill, Ken Akopiantz, Peter Currie, Nancy Crowell, and Brent Charnley via OJ. OJ has monitored these sites and provided consultation to the growers.

LCLT organized a grain and bean CSA of 40 subscribers with Horse Drawn Farms for twenty pounds of wheat for each subscriber and Lopez Harvest for five pounds of dried beans.

This first growing season of the Grain Project coincided with a worldwide epidemic of stripe rust. Many winter varieties noted as being “resistant” were destroyed. It was also one of the coolest, wettest springs on record, and the wettest September on record. All of these present enormous challenges to growing grain. Grain doesn’t like wet soils. Spring rains inhibit spring planting of grains in many areas of Lopez. We lack information on whether there is significant leaching out of nutrients in the fields over the winter.

Other challenges to growing of grain include the following:

- Lack of deer fencing of fields
- Flocks of hungry geese invading fields
- Lack of fertility in fields

Weed filled fields—lots of dormant weed seeds in soil
Dew and fog in fall when grain needs to be drying

Harvesting was done by sickle, scythe, and a binder modified and operated by Steve Lillestol. OJ introduced some sickles from Austria and David Zapalac invented a lightweight modified scythe. These harvesting techniques seem to work well for smaller plots. David helped harvest plots beyond his own. The fall of 2010 was the first season of threshing these experimental plots. At least four farmers had sufficient grain harvested and dried to be threshed with the steam thresher on the Currie property. It was a grand weekend with many on-lookers and grain growers and interested farmers helping.

The peddle thresher made available by the owner turned out to be inefficient and needs to be modified before further use. Other growers are threshing grain with their feet. An adequate means of seed cleaning is being sought. Currently seed cleaning can only happen by hand using a series of screens or strainers.

Island Appropriate Seed:

Grains grown on the West side of the mountains are not high in either gluten or protein, and are best used for pancakes, cakes, noodles, and pastries, but not for great bread flour. The soft white wheats, such as Lambert, grow well, and can be supplemented with other flour. Farmers have primarily chosen to replant from the seed they grew this year. LCLT distributed the WSU 1995 release of 'Finley' for tests. Previously “rust resistant,” it was devastated in the trials.

- 'Canus,' the heirloom variety recommended in the 2009 WSU publication “Growing Wheat in Western Washington” - when fall-sown - was also badly affected by stripe rust. It was less affected in the spring plantings. It was also the latest maturing of all varieties in the spring-planted plots.
- The surprise of the fall-planted tests was 'Sonora' the old Spanish Mission wheat. It was relatively early and totally resistant to Stripe Rust! Usually fall-planted in Arizona and California, it grew quite tall here and finally lodged about 75% during heavy late-spring rains. Due to lack of seed it was not included in the spring plots. It is considered a soft white wheat but is being used in California to make artisan bread.
- 'Selkirk,' a hard red spring 1955 Manitoba release which has lately done well as a “heritage variety” in the moist Eastern Canadian Maritimes also did very well. While getting some Rust in the fall plantings, it yielded a good crop of high quality grain. It also was taller than 'Sonora' from fall planting and finally lodged about 50%

under fertile garden conditions with heavy rains. It was also the best performer in the spring planted trials, with little Rust.

- 'Lambert,' a joint Washington, Oregon, and Idaho 1993 semi-dwarf release did extremely well despite Stripe Rust even in the heads. It was medium height with large heads of easy to thresh soft-white grain. It is bearded
- 'Gene' is a short beardless semi-dwarf soft-white 1992 release from OSU and once grown in the Willamette Valley. While it did well, it also got Stripe Rust in the heads as well as being susceptible to "sooty head mold" which turns the heads black and reduces grain yield and quality. It is now only grown in dry southern Idaho. Other than an example of a very short variety, or perhaps a grazing wheat or cover crop, it should not be recommended for grain production here.

A general observation was that spring-planted wheats (even the same varieties) are usually less susceptible to Stripe Rust given that they don't have to deal with the high humidity of rainy winters and springs! They are also less susceptible to lodging from growing too tall from fall planting. With higher nitrogen levels the spring wheats can also be expected to be higher protein and have higher gluten content.

A comment in an email from an Agronomy Professor at the University of British Columbia stated that WSU winter wheats have not done well in the Fraser Valley compared to wheats from Europe or even some from the Prairies. Importing European wheats into the U.S. by individuals is very difficult.

Several varieties of early Canadian hard red spring wheats were grown and three did well. (In addition to 'Selkirk.'):

- 'Garnet' is a very early hard beardless red spring 1925 Ontario release. It is noted for maturing under cool conditions – as it did here. Once grown in the far northern areas of Canada, it was not noted for high commercial quality.
- 'Reward,' another very early hard red spring wheat 1927 Ontario release for northern Canada, was noted for producing high protein grain on acid soils. It is also beardless.
- 'Park' yet another early beardless (do you see a pattern?) hard red spring 1963 release from Alberta. It is still grown in the Peace River area.

Fall 2009 Plantings

In October of 2009, 16 varieties of wheat (both true winters and spring types) were planted at several locations. The varieties – followed by the year and origin (or place) of release and class – were:

- **Red Fife** – 1842 Ukraine/Canada (hard red spring)
- **Turkey Red** – 1860's Ukraine/Kansas (hard red winter)
- **Sonora** – Spanish Mission wheat, Portugal? 1710 (soft white spring, but normally fall planted in Arizona and California)
- **Pima Club** – also via the Missions ??? (soft white spring, but normally fall planted in Arizona)
- **Allen** – 1910? Eastern WA (semi-hard white spring)
- **Reliance** – 1926 Oregon (hard red spring – winter-spring cross)
- **Canus** – 1935 Alberta (hard red spring – spring-winter cross)
- **Selkirk** – 1955 Manitoba (hard red spring)
- **Canthatch** – 1959 Manitoba (hard red spring – spring-winter cross)
- **Finley** – 1995 WSU (hard red winter)
- **Gene** – 1992 Oregon, Willamette Valley (soft white winter)
- **Lambert** – 1993 Idaho, Washington, Oregon (soft white winter)
- **Neeley** – 1980 Idaho (tall semi-dwarf hard red winter)
- **Boundary** – 1997 Idaho (tall semi-dwarf hard red winter)
- **UI Darwin** – 2006 Idaho (tall semi-dwarf hard WHITE winter)
- **Juniper** – 2006 Idaho (standard – not semi-dwarf – hard red winter)

Note that the last four only were planted in a non-fenced field and were totally eaten by deer and geese.

Spring 2010 Plantings

12 varieties of common wheat, 2 varieties of durum wheat, and 2 varieties of barley – one hullless – were planted in mid-May of 2010 at several locations on Lopez. (late - due to the rains and cold soil.) Three one-quarter acre “fields” of 'Fortuna' hard red wheat and a smaller “100# Plot” of 'Kyle' durum were planted at three locations.

- **Red Fife** – 1842 Ukraine/Canada (hard red spring)
- **Allen** – 1910? Eastern WA (semi-hard white spring)
- **Supreme** – 1922 Saskatchewan (hard red spring)
- **Garnet** – 1925 Ontario (hard red spring)
- **Reliance** – 1926 Oregon (hard red spring – winter-spring cross)
- **Reward** – 1927 Ontario (hard red spring)
- **Canus** – 1935 Alberta (hard red spring – spring-winter cross)
- **Spinkcota** – 1944 South Dakota (hard red spring)
- **Chinook** – 1952 Alberta (hard red spring)
- **Selkirk** – 1955 Manitoba (hard red spring)

- **Canthatch** – 1959 Manitoba (hard red spring – spring-winter cross)
- **Park** – 1963 Alberta (hard red spring)
- **Fortuna** – 1966 North Dakota (hard red spring)
- **Polk** – 1968 Minnesota (hard red spring)
- **Kyle** – 1984 Saskatchewan (spring amber durum)

Island Appropriate Equipment:

If more grain trials and growing grain for household use is to continue and expand on Lopez, more lightweight scythes, a small efficient thresher, a mid-sized seed cleaner, and a mid-sized community mill are needed. Several people have small home, countertop mills, but most people do not. Steve and Peter's thresher is great, but really only works a day or two a harvest, so another thresher setup is needed, and finally, there is an immediate need for a seed library as Steve wants to convert the present one into a milling facility.

Farmer and Consumer Awareness:

The necessity to rotate crops between grain harvests needs to be better understood and practiced. Cover crops need to be utilized, and or livestock grazing that fertilizes the field and devours weeds. Grain needs to be grown on the more arid or well-drained soils rather than wet. Spring plantings are inhibited by wet fields, while fall plantings are tested by flocks of geese and perhaps nitrate leeching.

At least six farmers participating farmers (Ona Blue, David Zapalac, the School, Steve and Michele Heller, Christine Langley, Peter Currie/Steve Lillestol) have committed to growing more small plots for 2011. In particular, Peter Currie hopes the Grain Project will continue, and is willing to continue to share use of his equipment.

Furthermore, there has been educational outreach around the issue of genetically modified organisms (GMO's), and the need to keep GMO seed out of the islands.

Seed Library:

Steve Lillestol modified a semi-truck bed into a seed vault, complete with a de-humidifier. Steve has allowed LCLT to share the vault for keeping seed. However, Steve wishes to change it from a seed storage vault to a community mill, and needs LCLT to make other arrangements for a Seed Library, that is, a cool, dry, rat-free storage for seed that can be used by the community in exchange for a return of seed after harvest—thus “library.”

2011--Next Steps and Needed Income

1) OJ Lougheed retained as a consultant to farmers, researcher, and other efforts as designed **\$12,000/year**

2) Build a Community Seed Library on LCLT owned land--**\$15000**

3) Purchase small grain equipment to be included in Seed Library function

Lightweight scythes	@\$150 each
Sickles	@ \$35 each
Small thresher	@\$500
Seed cleaner	@\$300 upwards
Total	@\$3500

4) Identify, secure and fence a two acre plot for experimental grain growing--**@\$4000**

5) Purchase covercrop seed and wheat seed **\$600**

6) Organize "home" gatherings to educate Lopez about grain, GMO's, and justice issues around local food, focusing on:

- Soil restoration and fertility – fall planted legume cover crops for biological nitrogen fixation. In other words, legume cover crops NEED to get planted to increase the nitrogen content of the soils so that high protein spring wheats will have higher protein.
- Spring planted high-protein, high-gluten, early maturing, Stripe rust resistant bread wheat – red and white – with a focus on heritage and traditional varieties
- Avoid Genetically Engineered varieties and offspring.

TOTAL: \$35,100

For more information, contact Rhea Miller, 360.468.3723 or

Email: lcltda@rockisland.com or visit LCLT office:

25 Tuatara Road, Lopez Island, WA 98261