

REPORTED WELL YIELDS IN GRAND ISLE COUNTY, VERMONT

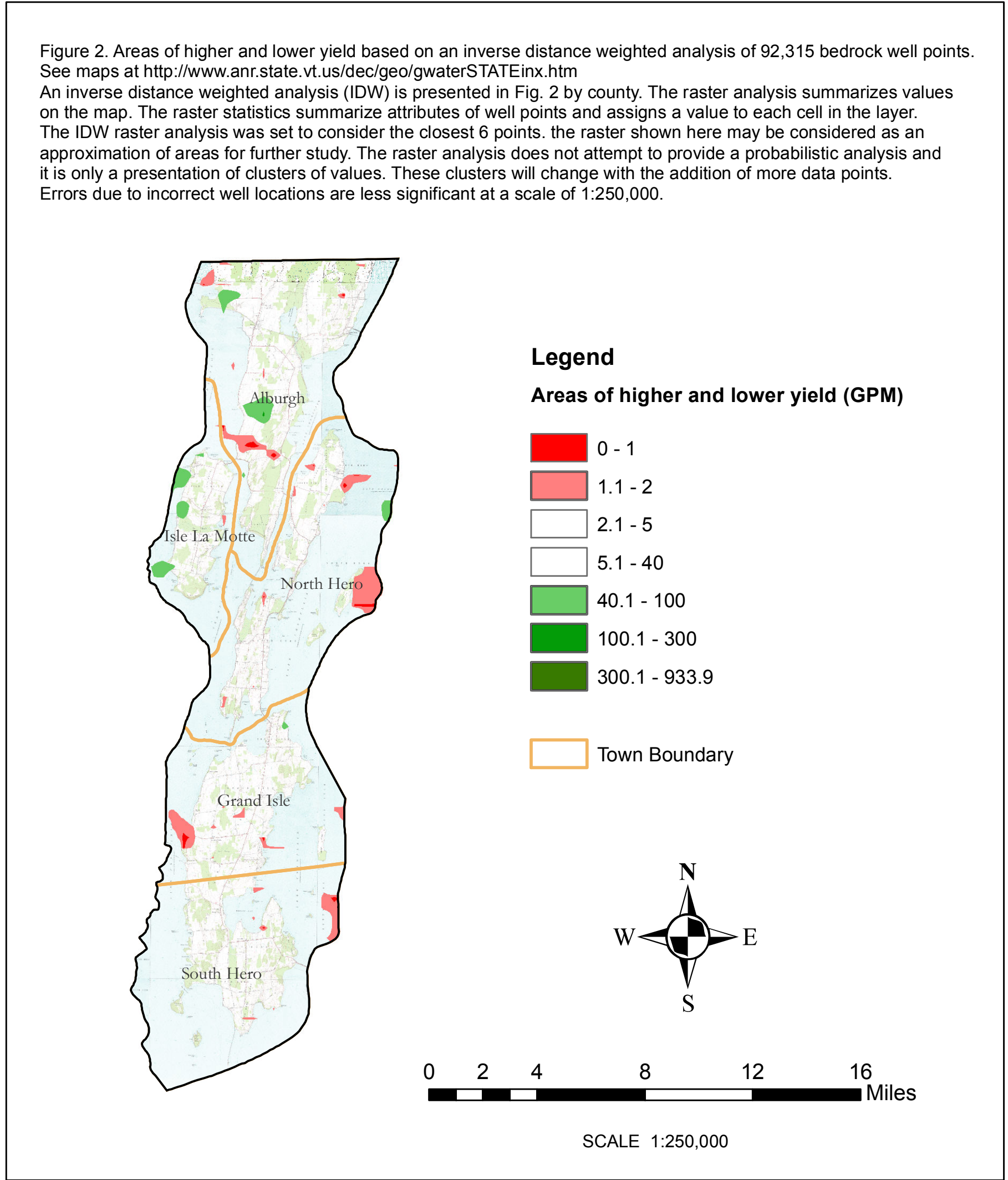
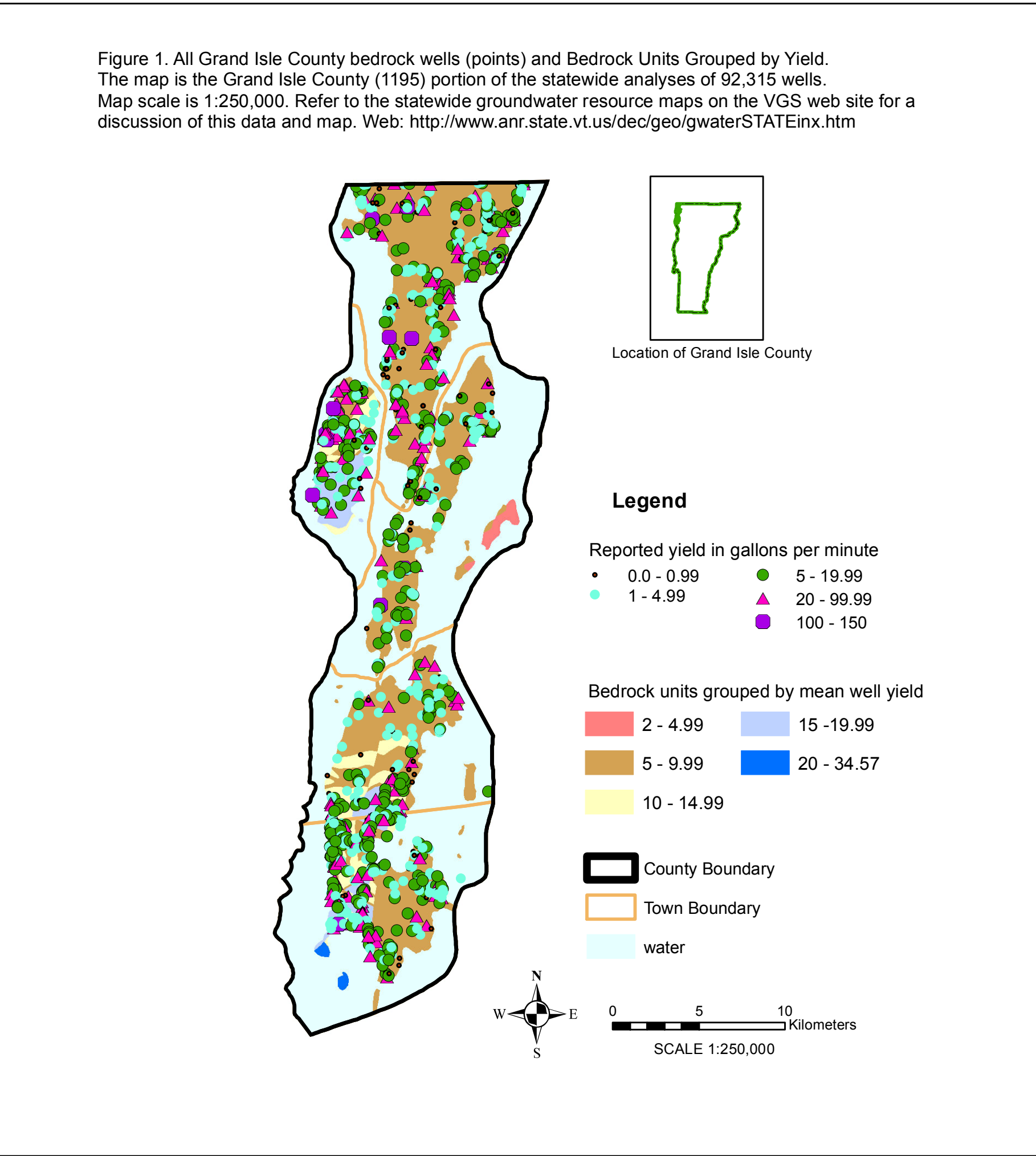


Table 1.

	State of Vermont	Grand Isle County
# of wells	92,315	1,195
# of located wells	15,389	567
Mean yield, GPM	14	11
Median yield	6	5
Maximum reported yield	1200	200
Standard Deviation	23	19
Mean depth, FT	293	267
Median depth, FT	260	242
Maximum reported depth	1,765	1,022
Standard deviation	158	144
% wells with yield \leq mean	70%	890/1,195 or 74%
% wells with yield $>$ mean	30%	305/1,195 or 26%
% wells with depth \leq mean	56%	663/1,195 or 55%
% wells with depth $>$ mean	44%	532/1,195 or 45%

GROUNDWATER RESOURCES BY COUNTY

This Grand Isle County groundwater resource map shows yield (gallons per minute) data for bedrock wells as reported in the VT DEC Water Supply Division database. This county map is part of a map series used to evaluate Vermont's groundwater resources using existing data. A total of 92,315 wells in the State of Vermont were analyzed in the accompanying statewide study. Data was divided into counties for presentation and scale (Figs 2, 3). Well locations in the database are from well driller descriptions and sketches. Some wells have been located by GPS or by correlating a well log to an E911 address. In Grand Isle County 567 out of 1,195 wells or 47% have an E911 or GPS address (Figure 1). The remainder have suspect locations.

Well yield (gpm) is generally estimated in the field with a bucket and timer. The time period is usually short and measurements are not meant to be precise. Comparisons of the mean and median values for all wells and the mean and median values for wells in Grand Isle County are shown in Table 1.

Wells are grouped into yield categories on the map presented here. Depth and yield vary due to many factors, including non-geologic factors. For example, a homeowner may drill until they obtain a desired yield. The factors are not indicative of capacity. Moore et al., 2002*, published "Factors Related to Well Yield in the Fractured-Bedrock Aquifer of the New Hampshire" in which they discussed a number of factors correlated positively or negatively to well yield. Among these factors are year drilled, median household income, drilling method, up gradient drainage area, thickness of overburden, depth drilled, proximity to streams/water bodies, type of bedrock, steepness of slope, elevation, fractures, and geologic structures.

The map presented is designed to be used in conjunction with other data and analyses. Groundwater flow in the crystalline bedrock of Vermont is mainly along planar features such as fractures, cleavage, faults, and bedding. These planar features may be interconnected and groundwater flow within this system is complex.

*Moore, R.B., Schwartz, G.E., Clark, S.F., Jr., Walsh, G.J., and Degnan, J.R., 2002, Factors related to well yield in the fractured-bedrock aquifer of New Hampshire: USGS Professional Paper 1660.

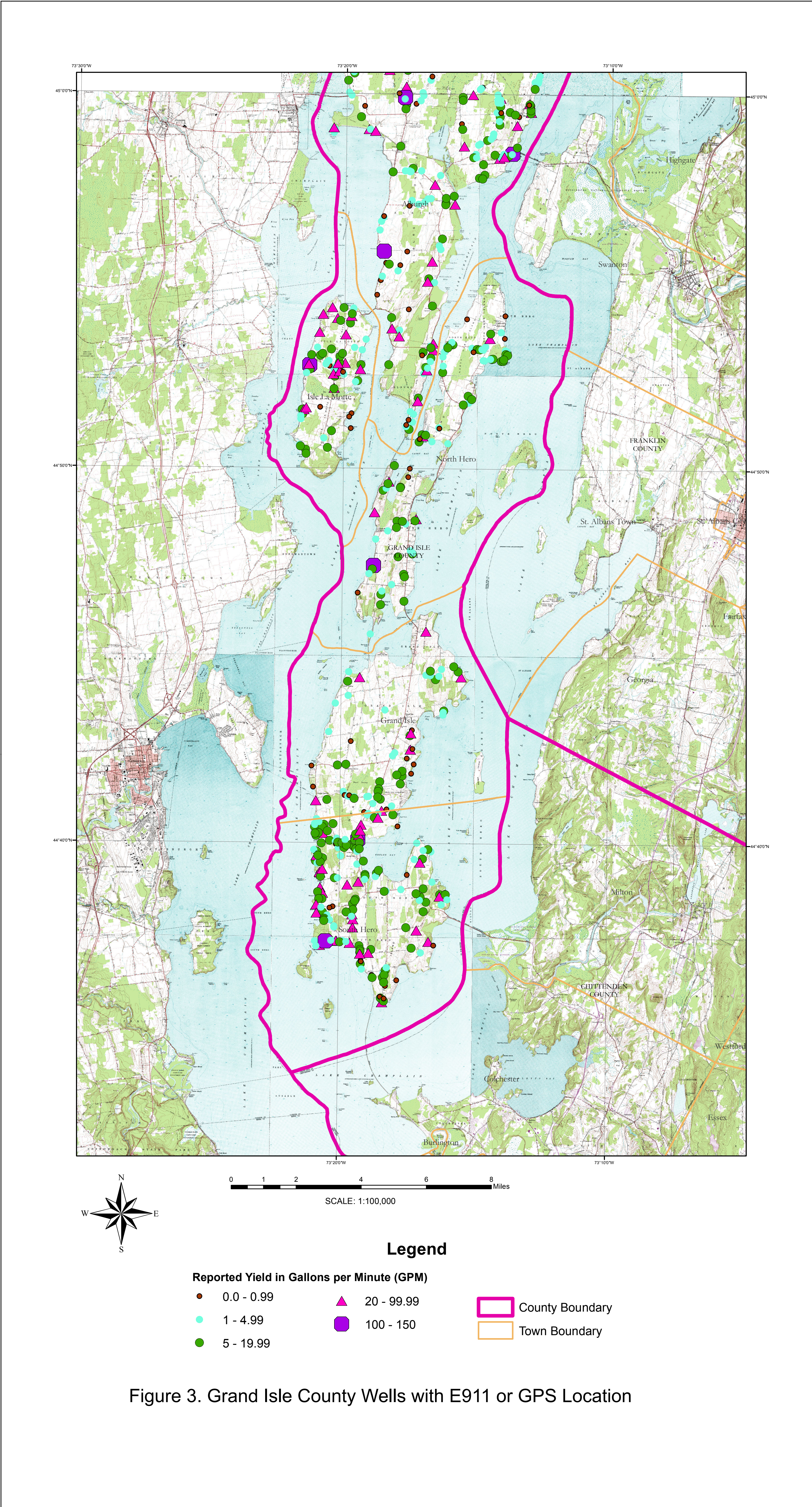


Figure 3. Grand Isle County Wells with E911 or GPS Location

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