Western Argolid Regional Project (WARP)

Field Manual 2014-2016 Seasons

with contributions by
W. Caraher, G. Erny,
A. Friedman, S. Gallimore,
M. Godsey, M. Gradoz,
S. James, S. Steinke,
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The Western Argolid Regional Project was directed by Scott Gallimore, Sarah James, and Dimitri Nakassis.

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Field manuals are living documents which not only are adapted over the life of a project to suit the needs of each field season, but are interpreted daily in the field and workspaces of a project. This document is no different.

This finalized manual from the Western Argolid Regional Project is an effort to produce an honest version of the manual that both reflects the day-to-day practices of the project as well as our regular efforts to adapt to the needs of the teams and slight shifts in our methods. As a result, this is a composite document that conflates and combines any number of adjustments offered by team leaders particularly during the first two field seasons of the project. For example, during that time we developed our site revisit procedures and settled on a procedure during our time in the field. There were also adjustments made to how we documented artifacts in the project storeroom in response to requests from local officials. We have included these changes in this document to reflect our practices in the field and in artifact processing. We made these changes in consultation with our team leaders who are the co-authors of this finalized text because both made this manual work in the field and made the text itself better.

We also revised the introduction that provides some broader context for the project, its goals, and its methodology, and added two appendices that reproduce our unit form and provides a field guide to surface visibility and conditions. We have uploaded a list of abbreviations for artifact types within the Chronotype system, and it is available here: https://doi.org/10.6067/XCV8458237.

The goal of publishing this document is to preserve a record of our field practices as well as to offer a resource to other projects looking to follow similar methods in their work. In the interest of making the genealogy of field practices somewhat easier to trace through grey paper documents such as
field manuals, we have released this under an open-access, by-attribution, share-alike license. This allows anyone to use freely the text of this manual, but requires that this manual be cited and any future documents based on this manual to be made available under a similar open access license.
I. Introduction

The Western Argolid Regional Project (WARP) is an inter-disciplinary archaeological project that sought to collect and interpret evidence of human activity from prehistory to the modern day in the western Argolid, Greece (37°43.1723’N 22°35.6999’E). Our survey area consists of 30 km² to the northwest of the ancient and modern city of Argos, where the fertile Argive Plain transitions into a series of mountainous valleys along the course of the Inachos River (fig. 1), which we surveyed over three field seasons from 2014-2016 (figs. 2 and 3). Although Argos is an important city in virtually every period of Greek history, a systematic regional study of its hinterland had never been undertaken. WARP conducted an intensive pedestrian survey with the goals of examining not only the city’s relationships to its immediate countryside and to the communities located therein, but also the dynamic settlement histories of this seemingly liminal area. Moreover, several important overland routes traverse this region connecting it to the neighboring territories of the Corinthia to the north and Arcadia to the west. The landscapes of the western Argolid were both influenced and were impacted by the regional and interregional networks that bound these communities to each other, as well as to the city of Argos. Developing a better understanding of these interconnections through survey data is key to reconstructing the shifting economic, social, and political conditions that structured diachronic settlement patterns in the Inachos valley. Furthermore, this work is poised to make significant and wide-ranging contributions to Greek archaeology and history in relation to scholarly discourses on Argos and the Argive Plain and the landscape histories of southern Greece.
Figure 1: Northeast Peloponnese with the WARP survey area highlighted (D. Nakassis).

Figure 2: Survey areas by season; modern villages indicated (D. Nakassis)
The region’s location at the intersection of numerous inland routes and on the boundary of Argive territory meant that we could expect its archaeological history to respond to the changing status of Argos’ relationships with its neighbors to the north and west as well as to larger patterns of activity, movement, and sovereignty in the Peloponnese. Within the survey area, there was also the opportunity to model how the small polis of Orneai (fig. 1) interacted with its *chora* and how the countryside around it changed with the fortunes of that settlement. Aside from these geopolitical questions, the Inachos valley can provide a significant body of new data on the rural landscape both of the western Argolid and for an area of the Peloponnese, more broadly complementing the work done elsewhere in Greece by intensive and extensive surveys.

Our primary research goal was to document the relationship between Argos and the western Argolid. We anticipated that the nature and degree of these extra-regional influences, as visible through the material culture, would shift over time.
and across the survey area in response to differing political and economic regimes. The possible destruction of Orneai in 416/415 B.C., for example, suggests an expansion of Argive military and political control over this Inachos valley in the late 5th c. B.C. and perhaps such events would appear in the character of material culture in its immediate region. Similar shifts in the administration of the region may have occurred in the Roman period, and are well-attested in the Medieval and Modern eras, which we expected could also be visible in the surface assemblages.

A second question was to examine the relationship between the survey area and other micro-regions in the northeastern Peloponnese. The physical manifestations of these relationships include both the material culture present in our survey area and the evidence for how individuals, material, and objects moved between our survey area and neighboring regions. This included roads, aqueducts, paths, and byways that formed the framework through which political, social, and economic relationships could be expressed. A Roman aqueduct that passes through the survey area, for example, connected the city of Argos to its *chora* but without necessarily representing a consistent opportunity for mutual influence. During the Early Modern period, pastoralists moved their flocks along paths from the Alea valley in Arcadia (fig. 1) into the hilly slopes of the Inachos valley and founded settlements next to long-standing villages that were more closely tied economically and politically to Argos. Through intensive survey, WARP collected data that can inform these issues related to the nature and impact of such connections.

A third goal was to illuminate the relationship between these networks and settlement patterns in the Inachos valley. While the major settlements in the region were known, the key site of Orneai and the candidates for other smaller ancient settlements mentioned in ancient texts had not been spatially or chronologically defined. Additionally, no work has been done to identify small activity areas and rural sites from any period
without conspicuous architectural remains. The resulting settlement record produced by previous studies was therefore lacunose and dominated by several long-known fortifications and a few clusters of burials. The intensive survey methods developed by projects in southern and central Greece, Crete, and Cyprus, have produced higher resolution data that capture both smaller artifact scatters as well as traces of landscapes compromised by time, ephemeral material culture, or geomorphology. In the relatively artifact-poor landscape of the Inachos valley, this approach was well-suited to map the settlement structure in the survey area through time, and produce assemblages of material that reveal the network of relationships present across the region.
II. Methodology

Survey archaeology has undergone a number of methodological transformations over the past few decades. Many of these innovations have been adopted by projects in Greece in an effort to improve data collection strategies and interpretative models, and which also incorporate specialist studies in geomorphology, archival studies, and ethnography among others. WARP aimed to be progressive in its use of recent techniques for conducting intensive pedestrian surveys, while adapting them to the specific conditions of the region. The following descriptions are intended to give volunteers a brief overview of our methods in order to contextualize the field procedures as outlined in section III.A. Detailed theoretical discussions of our approach and subsequent analyses of the data appear in the survey’s scholarly publications (see section VI).

A. Siteless Survey

The traditional method used by survey projects in the Greek world when examining a landscape is to identify clusters of artifacts lying on the surface that can be identified as sites. There is no consistent definition concerning how large or how dense an artifact cluster must be to designate it as a site, and each project tends to develop their own set of criteria. While analyzing the size, quantity, and distribution of sites present in a given landscape across different periods provides a means for analyzing long-term settlement patterns and for comparing different projects with one another, a survey model based on identifying sites is flawed in several meaningful ways. For instance, relying on dense clusters of artifacts to determine the presence of sites means that certain chronological periods will always be underrepresented within a landscape. Such periods may cover a short time span, meaning there is less opportunity for material culture to be deposited compared to other periods, or it is difficult to differentiate artifacts from that period from
preceding and succeeding eras. In addition, most survey projects that are structured around identifying sites often struggle to interpret low density clusters. Should these clusters also be considered sites or do they represent another type of activity in the landscape? Finally, the attempt to identify sites tends to deprioritize small amounts of artifacts that are found off-site, i.e., in disparate and discontinuous units away from “sites”, and therefore these data usually contribute little to the overarching conclusions that are generated by traditional surveys.

An alternative model for conducting survey has been gaining traction among archaeologists working in Greece. Referred to as “siteless survey”, this methodology makes the artifact, rather than the site, the basic unit of analysis. All artifacts recovered during a survey are treated as equally important for the data they provide, regardless of where they are collected in the landscape. The goal is not to identify specific dense clusters that could represent sites, although this could be done at a later date when the individual artifacts are plotted within a landscape. Instead, this approach ensures that wide spectrum of activity across an entire landscape is documented that can then be incorporated into multiple types of analyses.

Siteless surveys that have been completed in Greece have typically been small with respect to the amount of ground covered. The Eastern Korinthia Archaeological Survey (EKAS), for instance, surveyed an area of approximately 4 km². WARP’s goal to survey an area of 30 km² within the Inachos River Valley meant that we intended to conduct the largest siteless survey in Greece up to this point. This was a daunting prospect, and only 18 km² were ultimately walked, but one that has demonstrated the benefits of using this model on a larger scale.

B. Survey Units

When conducting a siteless survey, one important consideration is achieving an appropriate level of spatial control across the landscape. Much like stratigraphic units in excavation, survey units or SUs provide archaeological context for
all recovered artifacts and form the main unit for analysis of the artifactual data that we collect. In short, they provide the main way for archaeologists impose order over a region under investigation. Each unit should be consistent in terms of surface conditions, visibility, topography, and geology. Across the survey area, units should be relatively uniform in size for the duration of the project in order to maintain consistency and comparability of results. In many cases, units coincided with existing field boundaries because individual fields often enjoyed consistent surface conditions and field walls, fences, and changes in crops and vegetation provided convenient markers for field walkers. For WARP, the average size of a standard SU is just under 2500 m² with few units exceeding 5000 m².

To ensure that our investigation was both systematic and intensive, we use close walker spacing in every SU. This means that field walkers should be spaced at 10 meter intervals. Each field walker collects all artifacts within one meter on either side of their transect. In other words, every walker will be responsible for a two-meter swath within each SU. By applying these procedures systematically in every unit, we are employing an intensive method of collection and investigating thoroughly a high proportion of the landscape. The surface collection represents a 20% observation sample of the ground surface. Teams also use handheld Geographical Positioning System (GPS) units to ensure that they can pinpoint their location in the field accurately (see also III.A); the GPS units are equipped with high-resolution satellite images (Worldview-2) and aerial photographs (Greek National Cadastre and Mapping Agency).

C. Artifact Sampling

Our collection strategy is near-total: field walkers collect all artifacts (pottery, lithics, groundstone, metal), except for tile which is sampled; i.e., walkers collect all diagnostic fragments of tiles and one example of each distinct tile type. All artifacts of all types are counted using clickers and these numbers
entered onto the unit form. This sampling procedure is a modified version of the ChronoType system (see section VI), which was also used for processing and identification in the lab (see section V.F).

D. Geographic Information Systems

An essential component of the project is the use of Geographic Information Systems (GIS). GIS is a tool that enables the management and integration of large quantities of data from different aspects of a project. Specifically, it provides a continuous means for collecting, storing, manipulating, analyzing, and presenting data. This includes topographic, geomorphological, environmental, and cultural data. All data are entered into Microsoft Access databases that are linked to a GIS software package known as ArcGIS (created by ESRI). Aerial photographs and satellite imagery provide a foundation for spatially manipulating and presenting this data, but GIS should not be considered merely as a mapping tool. It is a means for facilitating communication and collaboration within an interdisciplinary project.

E. Geomorphology

Geomorphological study is a crucial part of our archaeological survey. Without careful investigation of the geological processes that have shaped landscapes, it is impossible to interpret the spatial distribution of artifacts, which are affected by a variety of post-depositional factors, especially land surface erosion and soil degradation. Surface sheet wash and gully erosion can significantly and quickly alter soils in semi-arid and arid climates where vegetation density is low and agricultural disturbance is high. Much of the evidence for long-term erosion histories is contained in the alluvial deposits of the seasonal streambeds and river valleys.

Geomorphology team from the University of Toronto, Pamela Tetford and Joe Deslonges, studied the soil erosion potential of the entire survey area in 2015, highlighting areas of
current and past high potential. Surface geomorphic processes were assessed using RUSLE and specific stream power models. These results will be compared to the spatial distribution of surface finds and aid in interpreting the effect of geomorphic processes in the depletion and redistribution of artifacts. They also examined cutbank exposures of the alluvial infill history of the upper Inachos river. The infill stratigraphy will be assessed in the context of the Older Fill (late Pliocene to early Holocene) and Younger Fill (Late Roman to Medieval age) debates regarding the role of climate versus human impact in sediment redistribution in Greek watershed.

**F. Historical and Ethnographic Studies**

Unlike the Venetian administrative documents that relate to the western Argolid, the relevant Ottoman texts have not been published. Such administrative texts, which include cadastral surveys, imperial orders to local officials, and taxation documents, have proven to be invaluable to regional projects in other parts of Greece. A specialist in Ottoman administrative documents, S. Mohammad T. Shariat-Panahi, is gathering, translating, and studying these documents, currently housed in the Babakanlıkhk Archives in Istanbul. We are incorporating the reports of early travelers, early maps, and demographic data collected by the Venetian, Ottoman, and Greek governments into a broader historical analysis of the region, and will consider these data in relation to the nature and distribution of artifacts of these same periods in the landscape.

Ethnography, along with study of modern documents, allows us to document the modern history of the western Argolid. Ioanna Antoniadou, an archaeologist and ethnographer, interviewed local inhabitants in and around the study area during our field and study seasons from 2015-2018. In addition to collecting information about the changing nature of land use, human interconnections involving trade, transhumance, marriage patterns, and the way that local communities interface with the administrative structures of the modern
Greek state, she has shown how landscapes are historically constituted by both archaeologists and local residents, and how such articulations of the landscape shape our analyses and conclusions.
III. Procedures

A. Field Walking

All survey teams should expect to spend the majority of their time in the field walking Survey Units. Our survey zone for each season encompassed 10 km$^2$ of the total 30 km$^2$ survey area (figs. 2 and 3). We intended to survey as much territory as possible each season using a systematic set of procedures.

*Defining and Mapping Survey Units*

Before walking a Survey Unit, it must be defined and delimited. Mapping of Survey Units is done by team leaders in consultation with the field director(s), normally one day ahead of field walking. While agricultural fields provide logical units to survey, consideration must be given to changes in topography, vegetation, soil conditions, and other geomorphological features. Some fields will be divided into two or more Survey Units while others may be combined, when justified, into a single unit. In practice, standard Survey Units ranged from approx. 1000-5000 m$^2$ with an average size of 2500 m$^2$.

The dimensions of a Survey Unit should be measured using a laser range finder and then sketched onto an aerial photograph. This demarcated map is then taken into the field and the units walked. Once walked, the annotated aerial photographs should be scanned as part of the process of inputting data for the GIS (see below). Flags are used so that Survey Units that have been mapped can be identified by the field teams. All mapped units should be walked (unless they are designated as unsurveyed).

*Field Walking: Lining Up and Walking*

When a field team begins to walk a Survey Unit that has been previously mapped, the team leader decides on the direction for the team to line up and walk. Field walkers will be arrayed
in a specified direction (e.g. East to West) with walker #1 positioned on the far left-hand side. Field walkers positioned along the side of a Survey Unit should space themselves approximately five meters from the edge. The next walker spaces himself/herself ten meters from the first walker and so on until the entire field is covered. Unless otherwise specified, the interval should always be ten meters and that interval recorded on the unit form. Where crops or trees are large (e.g. vineyard, olive grove), it is often easiest to walk in the same direction as the vegetation. Otherwise, the field should be walked along its long axis. The number of walkers needed to cover a particular unit will vary based on its size. In some cases, a walker may need to walk two transects, in others, some walkers may not walk the entire unit, especially if it is irregularly shaped.

A compass provides a means of walking in a straight line down a transect. Field walkers should bring a compass into the field daily. When a direction is decided (e.g. 170 degrees), field walkers should turn the black compass dial to this orientation. Field walkers walk in the direction of the outer arrow on the compass plate, being sure that the red North arrow stays within the arrow outline on the compass plate. It may be helpful for a walker to pick a point (e.g., a tree) at the end of their transect to keep themselves oriented as they walk, in addition to using their compass. It is important to regularly check one’s orientation while field walking and to monitor their spacing in relation to their neighboring fieldwalkers, since it can be particularly difficult to maintain a straight line when walking across slopes or fields without vegetation rows.

The team leader will give the signal to begin walking a Survey Unit. The walking pace will vary based on landscape, visibility, amount of background disturbance (rocks, wood, leaves, etc.), and density of artifacts. It is important that field walkers walk at the same pace within each Survey Unit since different rates of walking could result in differing amounts of artifacts noticed between individuals and bias the sample. The team leader will tell walkers to slow down or speed up so that the line of field walkers remains straight.
Each walker will be responsible for visually examining the ground surface one meter to the left and one meter to the right of their line and collecting artifacts only from this area; this two-meter wide strip is referred to as a walker’s “swath”. Walking a unit in this way provides a coverage of 20% for each unit. It also means that eight out of every ten meters will go unexamined and artifacts from those areas will not be collected. Field walkers should not veer off from their swath to collect artifacts outside of this two-meter area even if they are visible. If an artifact of particular note is observed in the unit, inform the team leader and the decision may be to collect it as a “grab” sample (see below).

**Collecting and Bags**

Field walkers should count all pottery and tiles they observe while walking their swath using two handheld clickers (one for pottery and one for tiles). These numbers will be recorded on the unit form. As they walk, field walkers should collect and bag all pottery and lithics they identify in addition to diagnostic tile fragments and undiagnostic but representative samples of each tile fabric. Other artifacts (glass, metal, ground stone, etc.) should also be collected provided they are of reasonable size (larger stone mortars should be noted, but not collected, for instance). All artifacts collected from specific Survey Units are placed in a plastic bag(s) and labeled with the unit number and other information (see below). Each field walker should keep the artifacts collected from his/her swath in their own individual bag until after the unit has been walked, when they are checked and combined by the team leader. Artifacts and bags from different Survey Units should not be combined under any circumstances. The bag should be closed using the wire attached to the tag in a way that is both secure and easily accessible. Please do not tie a knot at the top of the bags. The people at the apothke get annoyed by that.
Each and every bag requires a tag written in permanent marker with specific information that ensures the material can be properly identified with a particular Survey Unit. Every tag should include the following details:

- Initials of the team leader (Top left-hand corner – three initials)
- Date – mm/dd/yy (Top right-hand corner)
- Survey Unit number (center)
- Procedure (center, below DU number – procedure means standard, grab, resurveyed, etc.)
- Project Initials, i.e. WARP (bottom left hand corner)
- Bag number, i.e. 1/1, 2/3, etc. (bottom right hand corner)

Example Bag Tag:

```
QPH       06/15/14

1346
Standard

WARP      Bag 1/2
```

Revisits

Survey Units may be selected for additional investigation through new collection using the standard field walking procedure or the use of 5m total collection circles to produce a more robust assemblage of material from the units. These normally occur at the end of the season. The criteria for revisits is determined by the directors in consultation with the team leaders, and can include the presence of unusual artifact types
or those from poorly-represented periods, significant changes to the surface conditions in a unit over the course of the field season (e.g., recent bulldozing or plowing), or for further recording features documented during the initial fieldwalking (see section III.C). Revisits were not limited to units with high artifact densities. In fact, units that produced interesting assemblages despite low artifact densities sometimes received revisits especially if they appeared in proximity to units with similar assemblages or higher artifact densities. Teams used the same unit form to record field procedure, surface conditions, and artifacts collected during a revisit.

B. Unit Form (see Appendix I)

For every Survey Unit, it is necessary to complete a unit form. These forms represent the basic data to be collected from each unit, which can then be supplemented by entries in each team’s field journal (see section III.D). The data from these forms should be entered daily into an Access database (see section III.E).

Section 1: Survey Unit Information

Unit Number: Every field team will be assigned a block of Survey Unit numbers (1-1001, 1001-1999, etc.). Each Survey Unit should have a unique number assigned to it, which must be written at the top of each form (front and back).

Date: The current date using the mm/dd/yy format.

Start and End Time: The time when the team begins and completes each Survey Unit.

Area/Toponym: Provide a regional designator to show where, generally, within the survey area this Survey Unit is located. If unsure, ask the field director for the toponym you are working in.

Procedure: Every Survey Unit will fall into one of the four categories listed here. Standard is a Unit walked under normal conditions. Unsurveyed refers to a Unit that is
not or cannot be walked for any reason. A Grab is when an artifact is recovered from a Survey Unit before or after walking and/or from outside of any field walkers’ swath. Resurveyed designates a Unit that is being revisited at some point during the field season.

**Number of Bags:** Record the total number of bags collected from the Survey Unit.

**GPS Center Point:** The team leader should record a GPS point taken at the center of the Survey Unit. There is no need to take a waypoint in addition.

**Location/Description:** Provide a concise description of the Survey Unit including how it is accessed, its relation to other units, and local topography and land use. For Unsurveyed units, describe why the unit is not being walked. Grab samples require a record of what type of artifact was collected and why. For Resurveyed units, describe the reason(s) for returning to investigate this Survey Unit.

### Section 2: Survey Procedure

**Walker Spacing:** This should be recorded in meters. The standard walker spacing for a Survey Unit should be 10 m, but this may vary. Resurveyed Units may have smaller intervals.

**Bearing:** Using the GPS or a compass, record the bearing (in degrees) in which the Survey Unit is walked.

**Walker Direction:** The orientation of the field walkers in the Survey Unit (i.e. E to W, NE to SW, etc.). The direction of the walker array should be perpendicular to the bearing. When describing the orientation, start with the leftmost walker.

**Artifact Counts:** Record the order in which the field walkers are arrayed in a Survey Unit. The left-most walker should be 1 and so on. Each field walker will have two counters for recording the number of artifacts in their swath. These counts should be recorded for each walker and not
combined. Other artifacts could include metal, glass, bone, ground stone tools, or any other materials. Even if multiple types of other artifacts are recovered by one field walker, the count should represent the total and they can be defined in the comments. Despite teams having only 3-4 field walkers, there are spaces for ten initials and artifact counts since one unit may involve field walkers covering multiple transects.

**General Comments:** This section should include a discussion of other artifacts recovered, in addition to comments about pottery or lithics if warranted. List what types of other artifacts were found by the various walkers. You should also explain here why a walker may have different counts than others due to any number of factors. When describing the field procedure, this is a means of showing the specific method used. For instance, if you have the field walkers follow a contour you should mention that here.

**Photography:** It is necessary to take three photographs for each Survey Unit. The first should be an image of the Unit Form with the Unit Number filled in. The second should be an overall view of the Unit itself and the third a photograph of the soil surface to show visibility. The GPS units have built-in digital cameras that can be used for this purpose. Other photographs can also be taken of features or additional elements of a Survey Units that are interesting to note.

**Section 3: Vegetation and Land Use (see Appendix II)**

**Vegetation:** This section involves a series of check boxes where you should identify the dominant category (or categories of vegetation). In an olive grove this would be olives. If an olive grove has gone unplowed for several years it may be overgrown with weeds, which should also be checked. In some cases, you may also encounter bi-cropping where two or more crops are being cultivated in one field. The two categories that could cause confusion are phrygana
and maquis. Phrygana is a type of low ground cover that involves small, often aromatic shrubs, such as thyme and oregano. Maquis is a dense cover of large shrubs, often dominated by various types of prickly oak. Maquis is common on top of terrace walls in our survey zone and on hill slopes.

**Vegetation Height:** This is an assessment of the vegetation that most directly affects the field walkers’ ability to see the ground, which is not necessarily the same as the height of the tallest or most dominant vegetation in a Unit. Thus, in an olive grove the concern would be for any weeds or grasses, for instance, which may be part of the ground cover, not the trees.

**Percent Visible:** This is an assessment of the ability to see the soil, and thus any artifacts that may be present. The range is from 0% to 100% and should be listed in increments of 10. In other words, do not put 74% for visibility. Instead, 70% or 80% is acceptable. In addition, the visibility of the unit should be recorded in the swaths covered by field walkers rather than in a general part of the unit. If the visibility in one or more swaths is different, then record the average between them. See Appendix II for guidelines on determining soil visibility.

**Comments:** Here you can provide any relevant comments about vegetation, such as the location of the dominant vegetation types in the Survey Unit and the presence of by-cropping.

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**Section 4: Field Conditions**

**Soil:** Four categories are provided here to represent the soil conditions for any Survey Unit. Indicate whether the soil is “plowed and loose,” “plowed and compacted,” “unplowed and loose,” or “unplowed and compacted.” If the field walkers sink into the soil while walking (like in dry
sand), the soil is loose. “Plowed” can be relevant even in cases where this action does not appear recent if furrows are still present.

**Background:** This category represents the degree to which a field walker’s ability to see artifacts on the ground is hindered or obscured. This is a distinct category from visibility since even a field with 100% visibility could still have heavy background disturbance. A useful rule of thumb is that when walkers are spending much of their time picking up rocks they think are pieces of pottery, the background disturbance is heavy.

**Sherd Crusting:** This term designates the degree to which pottery recovered from a Survey Unit is covered by soil. If you must use a fingernail to remove soil from a sherd to see if it is in fact pottery, then the crusting is heavy. Otherwise, it should be designated as light or none.

**Surface Clast:** These check boxes represent the size (sand, fine gravel, coarse gravel, cobble, or boulder) and shape (angular, semi-rounded, or rounded) of the dominant types of stones present in the Survey Unit. Only check one box each for size and shape. See Appendix II for guidelines on determining clast shape.

**Soil Color:** This section asks for a qualitative description of soil color. Provide a tint (“brownish,” “reddish,” “yellowish,” or “greyish”) and hue (“brown,” “red,” “yellow,” “grey,” “white”) for the soil in your unit. See Appendix I for guidelines on determining soil color. Soil color can be affected by underlying geology, land use, moisture, and weathering processes. Reddish paleosols on the surface have been associated with Neolithic and Early Bronze Age pottery in other regions of the northeast Peloponnese, for example. Pale yellowish-brown, brownish-yellow, or yellowish-white soils in parts of the WARP survey area likely represent weathering of the underlying marl bedrock.
Comments: In this section, please provide any comments that are relevant to field conditions. For instance, if a field is plowed, provide an estimate of how recent this may have been.

C. Features

Typical Features of the Greek Countryside

The Greek countryside is a diachronic palimpsest of habitation, terraforming, agricultural land use, and roads and tracks. Field teams will see these features much more consistently than can be done from digitizing objects on maps or even high-resolution satellite photographs. It is important and useful for field teams to record features that they encounter in their units in a detailed and consistent way. In most cases it will not be necessary to sketch the feature, and any object worth sketching over the course of standard survey is probably worth revisiting in the field outside of the regular field day.

1. Roads and Paths

Note all roads that abut or run through your units. Roads provide access to the countryside and to major settlements. Archaeologically, they tend to produce scatters of material to either side typically associated with discard, but also with habitation, storage sheds and other features that benefit from the presence of this feature. Older roads and abandoned roads tend to appear as linear depressions in the landscape and are sometimes bounded by stone field walls. If a road appears in the unit, or a road or path depression appears in the unit, you should note the approximate width of the road or path depression and its condition (e.g. occasionally travelled). If the road borders the unit only note its condition. It would be useful for us to note abandoned paths and roads for revisit.
**Dirt Roads**: In rural Greece, many roads remain gravel or just dirt and these field roads will provide access to and border many of your units.

**Concrete Roads**: In Greece, concrete tends to be used on rural roads where erosion is common. The main roads running north-south across the valley are concrete because they also serve as part of the local drainage system drawing water from the fields and village of Lyrkeia to the Inachos River.

**Blacktop Roads**: These are the main numbered roads through the area.

**Paths**: Paths typically occur on slopes where modern vehicle traffic is not possible, in many cases these are sunken and marked by low walls. Some might preserve relatively flat, irregular cobble paving called *kalderimi* that typically date to the Ottoman period. Some will preserve evidence for reinforcement on the downslope side either in the form of a low wall or as a built foundation for the road.

2. **Walls**

You will likely encounter a bewildering variety of walls in the countryside and it will sometimes be difficult to determine with certainty the function of a wall. This is particularly the case with abandoned walls in fields. Please note the construction style, location in the unit (e.g. western border), and basic dimension of walls (height, width, and, if possible, length). Approximate dimensions are sufficient to communicate the scale of the wall. Normally walls are built of unworked dry stacked field stones but can contain reused blocks or other stone artifacts, if this is the case note them briefly and mark the unit for revisit.

**Terrace walls**: These are normally made of dry stacked field stone and tend to follow the contours of slopes and form the borders of fields in the western Argolid. Often they
attract significant amounts of maquis-like vegetation which can obscure their surfaces. Terrace walls will rarely require revisits to units, but collapsed terrace walls sometimes provide important chronological information that can be gleaned from pottery associated with the terrace wall itself and the soil behind the collapse. If you suspect that pottery associated with the construction or collapse is visible, please invite us to revisit the site.

**Field walls:** These walls mark the division between fields. On flatter terrain they define the limits of existing or earlier fields and tend to be dry-stacked, when they are built on slopes they often run perpendicular to terraces. Typically, these features will not require a revisit.

**Fortification Walls:** It is possible that you will encounter fortification walls on the survey. These generally tend to be wider than field walls and will range in construction from dry-stacked to mortared cut blocks to ashlar masonry of various types. The presence of a fortification will require a revisit the unit where they appear for a more technical and detailed description.

**Cut blocks:** Generally field stones are irregular in shape and lack any consistency on their surfaces. Cut stones are likely to be orthogonal or regular in shape and may feature evidence for their working on their face such as chisel marks. If you find cut stones or stones you think are cut, you should mark the unit for a revisit.

**Check dams:** Check dams serve to slow the flow of water down ravines in order to speed the accumulation of soil deposits and to reduce erosion. Such walls are usually perpendicular to torrents or ravines. Like terraces, they are almost always made of dry-stacked field stones. Typically, the presence of these features will not require a revisit.

**Mandres:** Greek farmers often create animal pens (*mandres*) using a combination of dry-stacked field stone walls and dried vegetation. These are most frequently found on the slopes of hills above the highest cultivated fields or outside
of areas that were recently cultivated, i.e., in areas of pasture land. The walls tend to be circular rather than orthogonal (like field walls). Mandres sometimes have small, subsidiary compartments separated from the main animal pen for younger animals. The height of the dry-stacked walls is sometimes increased with brush and sticks. Goats can cross the stone walls without need for an entrance, so a clear feature like a door is often missing. Typically, they will not require a revisit, unless a group of several abandoned mandres are found.

**Architectural Walls:** There will be buildings in your survey units (see below). If the building is still standing to anything close to its original height or its original plan (i.e., the space of the structure can be easily discerned by the remaining walls), then attempt to describe the building. If the shape of the building is not easily discerned, then describe the remaining walls. In the features field, provide their construction style (i.e. dry-stone, mortared stone, ashlar(!), brick, brick and stone, cinderblock, etc.) and approximate measurements. If there is no evidence for modern construction, then it would be helpful for us to revisit the unit and evaluate the walls more closely.

**Metal Fences:** As one might expect, metal fences have come to replace dry-stacked stone walls to mark field divisions. No revisit is necessary.

**Gates:** A wide range of ad hoc and formal gates will appear in field walls. A quick description will do. No revisit is necessary.

**Concrete slabs:** There will likely be a range of concrete slabs throughout the survey area and they serve a range of different functions. If they are closely associated with a feature (say a building, road, cistern, or a pump and well), then they should be mentioned in association with these features, but if they have no associated features note them and provide a quick approximate measurement and location. No revisit is necessary.
Field Clearance Piles: In areas of rocky soil, farmers sometimes create piles of stones (typically cobbles or larger) removed from the path of the plow. These piles often lie at the edges of fields and at their largest can stand close to 2 m in height and 5 m in width. More common are smaller piles of stones typically set at the corners of fields. Sometimes they can include building material (which could be a tell-tale sign of a collapsed building), so they are worth checking. Particularly large field clearance piles (i.e. over 20 sq. m in area and over 1 m high) might suggest a revisit to the site.

3. Buildings in the Greek Countryside

Kalyvia: Small seasonal houses (sg. kalyvi, pl. kalyvia) might appear in units that are over a few kilometers from a village. These serve as temporary residences for farmers while harvesting grapes or wheat, but especially olives, in fields that are so distant from the village it is more economical to stay in the fields than return home at night. While the appearance of these houses will depend on their age and the needs of the owner, they are generally more modest in appearance than village houses, with one level and generally one room. In their most elaborate form, they can include an oven(s). The walls of these buildings will range from dry stone masonry to modern cinderblock and brick. Check for a revisit and take a quick, approximate measurement and location of the building.

Ovens: Kalyvia and other pre-modern houses often have small (1.5 m square) domed ovens in the general area of the house. The domes are often made of ceramic tiles, field stones, and mortar and have a plastered exterior. Like cisterns, ovens are part of the architectural features in the “domestic package” around the site of habitation. These should be marked for revisit and briefly documented in the field.
Churches: The Greek countryside is dotted with small churches today and it was in the past. Look for an apse in the east and check revisit. Be attentive when documenting collapsed buildings for the evidence of an apse on the eastern side. Churches may be the same size as kalyvia.

Storage Sheds: Agricultural fields will have a wide range of small storage sheds. Smaller than kalyvia, these sheds might be built with cinderblocks or field stones. They tend to be reasonably secure if still in use and may be associated with wells or pumps (some are basically pump houses). Generally, do not check revisit for a storage shed, but if there is something baffling about it, e.g., its function appears unclear or the building is pre-modern, check for a revisit.

Collapsed buildings: It is likely you will encounter piles of rubble associated with collapsed rural buildings in the survey area. These can be distinguished from field clearance rock piles by the presence of roof tile or bricks, mortar, wood, and, generally speaking, larger stones. Collapsed buildings of any appreciable size should be marked for revisit.

Modern Houses and Villas: Generally, we do not survey in the yards of modern houses or villas in the countryside which are often surrounded by fences. But we might designate these as unsurveyed and note the modern house as a feature.

4. Other Common Features

Wells: There are wells throughout the survey area and it is very useful to note these (sometimes with pumps and well houses). Modern wells tend to be ca. 5 m in diameter and the well-head itself is usually covered by a metal cover connected to the pump. Earlier wells are larger and typically have stone or in some cases concrete well-heads. Note the approximate diameter of the well, if possible, take a GPS
point and briefly describe its location in the unit. Unless there is something unusual about them, they do not require a revisit.

**Cisterns:** Cisterns tend to appear in areas where groundwater is not readily available or accessible. While cisterns can vary in size and design they generally feature an enclosed area to store water and a small opening to extract it. Cisterns constructed in the 19th and 20th centuries are often topped by a large (ca. 5 m in diameter) circular area that serves to collect the torrential Greek winter rains and funnel the water into the cistern. The walls supporting these collection discs are usually dry-stacked stones. More modern cisterns are typically concrete or plastic. Note the approximate diameter of the cistern, if possible, take a GPS point and briefly describe its location in the unit. Pre-modern cisterns should be marked for revisit.

**Erosional Features:** Throughout the survey area you will notice erosional features, particularly deeply eroded channels running parallel to the slopes of the Inachos valley. Please note these features and locate them within your unit. These eroded channels can expose earlier soil horizons and could expose different types of pottery than those present on the surface of the ground. If you observe an erosional feature influencing the distribution of the ceramics in the unit, mark the unit for revisit and document the feature carefully.

**Bulldozed Terraces:** The bulldozer has shaped the Greek landscape in recent decades and it is important to note the abrupt scarps associated with bulldozer cuts that appear in the survey area. In some cases, bulldozed areas can expose older soil horizons, so please note the extent and location of bulldozed areas of units. Wherever possible isolate these cuts as separate units. If a cut has revealed an ancient feature or has artifacts eroding out of it, please mark it for revisit.
Built Drainage Channels: During torrential rains, run-off from the village of Lyrkeia and the surrounding fields has the potential to erode fields and roads. Concrete drainage channels direct water from outside the village through the fields and into the Inachos River. No revisit necessary.

Built Irrigation Channels: While rarely intact today, you might encounter sections of concrete irrigation channels. These are typically raised concrete troughs or channels that carry water through fields. Please document these and note that if might be worth revisiting.

Irrigation Pipes: Many units, particularly those associated with vineyards and fruit trees, will have irrigation pipes of hard black plastic or, less frequently, metal that drip water into shallow pits around the base of trees or vines. Note the presence of these pipes in the field, but there is little need for revisiting.

Trellises: Vineyards require trellises to support vines. Installing trellises typically requires some excavation in the field. This might move artifacts into the plow zone and should be noted and documented approximately (i.e. number of rows of trellises and approximate spacing). No revisit necessary.

Alonia: These are paved, circular areas used for threshing grain before the process became highly mechanized in the later 20th century. Typically, they are built of dry stone masonry, but may show later concrete repairs. They can exceed 10 m in diameter, and are often elevated about ground level. Most often alonia appear on slopes or heights to avail themselves to the wind which would carry away the chaff from the wheat during the threshing process. Aloni usually occur in clusters, sometimes associated with kalyvia. Document an aloni by noting its approximate diameter and height. Mark for revisit.

Dumps: The banks of the Inachos River, as well as seasonal torrents and ravines, are popular places for dumping in the Greek countryside. These dumps tend to appear
in discrete piles and might feature bricks, cinderblocks, roof tiles and other building material. Note the location of these dumps particularly if they influence the counts in any particular swath. No revisit necessary.

**Soil Changes**: Occasionally you will observe an abrupt soil change within a unit. In many cases this is because of bulldozing to level a field or the dumping of new soil from another location. In general, the best practice is to mark the area of soil change as a new unit. In some cases, this will not be practical because the new unit would be too small to accurately map and walk. If this occurs, note the area of soil change carefully, especially if you notice that this area produces a different density of artifacts or artifacts of a different period. It might be best to mark this as a reason to revisit a unit, especially if it changes artifact densities or artifact types.

**Electrical Pylons**: There will be electrical pylons in the survey area and the footing for these pylons involves excavation which might move artifacts into the plow zone. Please note the location and approximate size of the footing for each pylon. It will not be necessary to revisit these features unless they appear to have moved significant quantities of artifacts (or architectural blocks, for example) into the plow zone.

**D. Field Journal**

Each team, in addition to the Unit Forms, should also keep a field journal to provide supplemental information about their daily experience in the field. The goal is to use the field journal as a means for describing the experience of field work beyond the information documented on the unit form and thereby record a more holistic view of the landscape. In addition, entries could include assessments of the kinds and types of artifacts found in the landscape, any information provided by locals about land use and cultural material on the land, and anything else that may not be remembered at the end of the day. Quick
sketches could also be included in the notebook. Each member of the team can be responsible for filling out entries on a daily basis while in the field. It would be best to add to the daily entry after walking about five or so Survey Units in order for every member of the team to stop and reflect on what they have seen.

E. Data Entry

After returning from the field it is necessary to enter all of the information on the Unit Forms into a Microsoft Access database. The fields in that database correspond to the data recorded on the unit forms, and once entered should be checked off in the lower right corner of this paper form. These forms must also be scanned for archival purposes. An additional task is the scanning of the annotated aerial photographs with mapped and walked Survey Units and topographic or feature information. There are laptops designated for these purposes. Field teams, in consultation with their team leader, should decide on a work schedule for data entry that enables every student to participate regularly in this stage of the process. Artifacts will be processed in the lab and the information entered a second database there.
IV. Artifact Processing

All field teams will spend time working in the *apotheke* or the lab and storage facility in Argos during the season. We will use a six-day rotation. In other words, every field team will work in the apotheke once during a six-day period. We will try to prioritize studying material collected by respective field teams so that team members get a sense of the material that they have collected.

A. Pottery Organization

The first activity undertaken by the apotheke team every day should be to organize the previous day’s pottery for storage and analysis. This involved separating the various pottery bags by field team and placing them in sequential order by unit number. The pottery is then moved to khlouvas (crates) and stacked in the section of the apotheke dedicated to each field team. This task should take about 15-20 minutes depending on the quantity of pottery collected the previous day.

B. Khlouva Organization

All the finds collected during the survey are stored in labeled khlouvas in sequential numerical order. The tag on each khlouva must list the range of unit numbers present within it and the khlouva number. In addition, operations that have been completed for artifacts in a particular khlouva should be noted on the tag. This involves one of three designations:

- P = Photographed
- S = Scanned
- R = Read

Only when a khlouva tag has both a P and an R can its analysis be considered completed. Artifacts in a khlouva do not have to be scanned prior to being read.
C. Pottery Washing

Despite permission from the ephoreia to wash our pottery using acid, we feel that it is more prudent and efficient to scrub the finds using only water. The pottery collected from the surface has minimal crusting and can easily be cleaned with only a brief soak and scrubbing. Not all pottery will be washed, however, only pieces that are heavily soiled or are destined for cataloguing because of the lack of drying space inside the apotheke. Students will wash pottery on a one-hour rotation during their apotheke day. The first step is to fill a lekane (plastic basin) with clean water from the bathroom sink and then wash pottery selected by the directors. Dirty water must be poured down the toilet (not the sink) as stipulated by the museum guards. A large scrub brush or tooth brushes are the main cleaning implements. Pottery is dried on tarps spread out on the apotheke floor. This can take several days since there is little to no direct exposure to sunlight. Artifacts from different Survey Units must be kept separate and the tag must clearly be associated with its respective material. Dried pottery is then placed into new plastic bags with the appropriate tag.

D. Photography

The Ministry of Culture stipulates that all archaeological material stored in an apotheke must be photographed to document what is present. Two students will be assigned to photography, rotated on a one-hour basis. One table will be designated for photography with a white board attached to its surface. All of the pottery from a specific unit and sample should be placed on the table and roughly arranged around the white board so that each sherd is visible. The unit number and sample (i.e. Standard, Grab 1, Grab 2, Resurvey, etc.) should be written on a whiteboard in dry erase marker and a photograph taken. A daily register must be kept of everything that has been
photographed. When all of the artifacts in a particular bag or khlouva have been photographed, the tag should be marked with a P.

**E. Scanning**

Depending on the number of artifacts collected during the season, there may be time constraints for reading everything into the Microsoft Access database. Scanning is a procedure that involves quickly looking at the pottery from a unit and providing a brief description of what is present. A student will type this information into a free text field at the top of the finds database form. Students, on a one-hour rotation, will do data entry into the finds database based on the information provided by the artifact specialists. Overall, scanning has two primary goals. First, it enables us to designate priority units, both for immediate reading and for later analysis by period specialists. Second, it provides presence/absence data that can provide a rough sense of landscape use during different periods. Scanning can often be combined with photography. In other words, after the students take a photograph of a unit, Sarah or Scott can quickly scan the unit before it is re-bagged.

**F. Reading**

The main activity undertaken each day in the apotheke is to read in pottery and other artifacts collected from the various survey units into the finds database. One or two students (depending if both Scott and Sarah are reading) will be assigned to enter information into the database, rotated on a one-hour basis. One table is designated to this task for each specialist. The pottery from a specific unit is removed from its bag and sorted by period, functional category, fabric, and/or ware. Individual artifacts or groups of homogenous material are divided into batches, counted, weighed, and their characteristics (fabric, shape, color, function, decoration) entered into the database; using this method every find collected from the
unit is recorded. The removal of pieces for cataloguing also occurred at this stage. Catalogue pottery is bagged separately and moved to a khlouva marked ‘to be catalogued’. Once all of the pottery is read, it is rebagged and a notation written on its tag. This notation consists of the word ‘Read’ followed by the name of the pottery analyst. When all of the units from a particular khlouva have been read, an R should be added to the khlouva tag.

G. The ChronoType System

While the characteristics of each artifact were described in the database using various fields, the date of each object was assigned using the ChronoType system (see section VI). A chronotype is a coded designation for an artifact that can range from being very specific, like Fine Ware, Late Helladic IIIA1 (FWLH3A1), to very general, such as Tile, Ancient-Historic (TIAH). Artifacts with an established typology, for example, a Late Roman 2 Amphora (AMLR2), or with an easily recognized shape, like a conical loomweight (LWC), have their own unique codes. Chronotypes are intended to capture in a single descriptor as much information as the technician can provide about material, function, and date for a given artifact, while allowing flexibility to incorporate uncertainty about these same categories. For example, a cooking ware body sherd from an unidentified shape, which based on fabric could date to any time between the 5th c. B.C. to 2nd c. A.D. (thus spanning the Classical, Hellenistic, and Early Roman periods), would be given the chronotype Kitchen Ware, Classical-Early Roman (KWCHRE). This designator reflects both the certainty about the material and function and the uncertainty about the date that can be assigned. All artifacts were assigned to a specific chronotype in the database selected from a pulldown menu. This systemization facilitates running artifact-based queries, as well as a smoother integration of every sherd in the Finds database with the SU database in GIS.
H. Cataloguing

A subset of artifacts is selected for cataloguing from all material collected by the survey. The criteria for cataloguing varies from unique finds to representative types in the region. The Corinth Excavations system for inventorying finds was used describing these objects in detail, and these were entered into a separate Access database. All catalogued pieces are photographed and many drawn for publication purposes.
V. Logistics

A. Schedule

The schedule below is in place for the entire season.

Fieldwork Schedule: 4-5 days per week

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:30-6:00 am</td>
<td>Breakfast</td>
</tr>
<tr>
<td>6:00 am</td>
<td>Flexible departure for field site (depending on distance)</td>
</tr>
<tr>
<td>7:00-9:30 am</td>
<td>Fieldwork</td>
</tr>
<tr>
<td>9:30-10:00 am</td>
<td>Break</td>
</tr>
<tr>
<td>10:00 am – 1:00 pm</td>
<td>Fieldwork</td>
</tr>
<tr>
<td>1:00 pm</td>
<td>Depart for Myloi</td>
</tr>
<tr>
<td>1:30 pm</td>
<td>Lunch</td>
</tr>
<tr>
<td>3:30 pm</td>
<td>Data entry and post-processing</td>
</tr>
<tr>
<td>7:30 pm</td>
<td>Group Dinner</td>
</tr>
</tbody>
</table>

On apoteke days, you will have a slightly different schedule, since it is only open from 8:00 am – 2:00 pm.

Schedule: Saturday

8:00 am-2:00 pm Site/Museum Trips
(be at the bus by 8am unless told otherwise)

Schedule: Sunday

6:30 pm Team Reports
7:30 pm Group Dinner

B. Breakfast and Departure

The time scheduled for breakfast in the fieldwork schedule (5:30-6:00 am) is recommended so that anyone who wishes to eat before leaving for the field will have time. Everyone will self-cater breakfast in their own room. You are free to wake up
whenever you want and can skip breakfast if you choose. The main requirement each morning is that everyone is ready to leave on schedule in their team’s rental car.

Field walkers should help their team leaders ensure that all supplies have been loaded into their cars and that they are prepared for the day. You should expect to ride back to Myloi in the same vehicle in which you left.
VI. Further Reading

Relevant Survey Publications


Artifact Processing


**WARP Publications to Date**


VII. Online Resources

Project’s website: https://westernargolid.org

Unit database and photos available on Open Context: https://opencontext.org/projects/892c5794-4f2a-4c5c-8c75-d72193d20c86

Chronotype Table: https://doi.org/10.6067/XCV8458237
### Western Argolid Regional Survey (WARP) unit form

**General Information**

<table>
<thead>
<tr>
<th>Team leader initials</th>
<th>Procedure (pick one) and event (number):</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Standard</td>
</tr>
<tr>
<td>Date (mm/dd/yy)</td>
<td>Start time</td>
</tr>
<tr>
<td></td>
<td>End time</td>
</tr>
<tr>
<td>Area/toponym</td>
<td></td>
</tr>
<tr>
<td>GPS center point</td>
<td></td>
</tr>
</tbody>
</table>

**Location and description (access, relation to other units & local topography, land use, etc.)**

**Survey procedure**

<table>
<thead>
<tr>
<th>Walker spacing</th>
<th>Bearing (in degrees)</th>
<th>Direction of walker array</th>
<th>FROM</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walker initials</td>
<td></td>
<td>Walker initials</td>
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<td>Tile</td>
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<tr>
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<tr>
<td>05</td>
<td></td>
<td>Sherd</td>
<td>Tile</td>
<td>Lithic</td>
</tr>
</tbody>
</table>

**General comments about unit (identify “other” artifacts, explanation of field procedures)**

**Photo of form** | **Photo of unit** | **Visibility photo**

**Checked:** _____

**Entered:** _____

**Scanned:** _____
Western Argolid Regional Survey (WARP) unit form

Vegetation and Land Use (check dominant category or categories)

- Coniferous
- Deciduous
- Phrygana
- Maquis
- Barren
- Olives
- Grapes
- Citrus
- Stone fruit
- Other fruit trees
- Almonds
- Market garden
- Grain
- Grain stubble
- Maize
- Weeds?
- Other
- If other, explain:

Dominant vegetation height: none <ankle <knee <waist <head >head

Percent visible (walked area, 0-100, by 10s)

Comments on Vegetation and Land Use:

Field conditions

- Plowed, loose soil
- Plowed, soil compacted
- Unplowed, loose soil
- Unplowed, soil compacted

Background disturbance: None Light Moderate Heavy No Sherds

Sherd crusting None Light Heavy No Sherds

Dominant surface clast size (check one)

- Boulder (>300 mm)
- Cobble (300-75 mm)
- Coarse gravel (75-19 mm)
- Fine gravel (19-5 mm)
- Sand (<5 mm)

Clast Shape (check one): Angular Semi-rounded Rounded

Soil Color: Tint: ________ Hue: ________

Comments on field conditions

Features

Revisit? If yes, explain briefly:

Checked:_____
Entered:_____
Scanned:_____
Appendix II: Guidelines for Determining Visibility, Soil Color, and Dominant Surface Clast Shape

100% visibility

90% visibility
80% visibility

70% visibility
60% visibility

50% visibility
40% visibility

30% visibility
30% visibility

20% visibility
10% visibility

0% visibility
Reddish-red
Brownish-brown
Reddish-brown
Yellowish-brown
Grayish-brown
Mostly angular clasts
Mostly semi-rounded clasts
Mostly rounded clasts